inorms

TECHNICAL COMPLIANCE

PRACTICAL GUIDE · 2026 EDITION

Safety Justification for EAC The Handbook

A comprehensive handbook for manufacturers, exporters and product managers



RISK · PROTECTION · EVIDENCE · APPROVAL
TESTING · DOCUMENTATION · CHECKLISTS

As of 14 October 2026

ac-inorms.com

SAFETY JUSTIFICATION · EAC HANDBOOK

How to use this handbook

Justify safety and connect technical evidence.

This handbook addresses manufacturers, designers, plant builders, quality managers, operators and exporters. It explains the safety justification used in EAC procedures, known in Russian as Obosnovanie Bezopasnosti. The main focus is machinery, assemblies and pressure equipment. It connects the AC Inorms sector page and regulations archive with verified official foundations and an original practical method. Both editions have the same structure. Templates and cases support project work but do not constitute an approved assessment of a specific product.

Structure and use

Pages 4-10 address purpose, records, regulations, standards and existing CE evidence. Pages 11-17 cover roles, workflow, inputs, limits, life phases and users. Pages 18-24 discuss hazard areas. Pages 25-32 address risk, safeguards, reliability and evidence. Pages 33-36 cover commissioning, management, changes and archiving. Templates appear on pages 37-40; cases, FAQs and release on pages 41-47. Sources and contact complete the handbook.

Edition 1.0 · As of 14 October 2026

GOST 33855-2016 is the relevant current Russian standards reference. Scope follows product and applicable regulation. A concise presentation does not remove evidence requirements.

Sources: [1]-[9]

SAFETY JUSTIFICATION · EAC HANDBOOK

Contents

Linked chapters and printable working aids.

Chapter	Pages
Purpose, regulations and standards	4-10
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Implementation, changes and templates	33-40
Cases, FAQs and release	41-47
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Suggested starting point

Clarify product boundaries and applicable regulations. Collect confirmed drawings, instructions and evidence. Then describe tasks and hazard scenarios before approving the safety argument.

SAFETY JUSTIFICATION · EAC HANDBOOK

What a safety justification achieves

A reviewable connection between risk, protection and evidence.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Product	Function, configuration, models and technical limits.
Hazard	People, environment and property in actual use.
Assessment	Explain scenarios and remaining risk.
Protection	Engineering and other measures with supporting evidence.
Result	Reasoned conformity, conditions and revision.

The safety justification brings together the technical argument explaining why actual configuration meets applicable safety requirements. It is neither promotional copy nor an authority-issued EAC certificate. A document set can carry the argument; where insufficient, add a structured presentation. A list of standards alone does not establish which hazards are controlled. Connect requirements, technical characteristics and actual support. Plan the assessment during development and keep it linked to product revision. Record missing information explicitly rather than presenting it as confirmed safety.

In practice

A sound conclusion is traceable to drawings or test reports.

Sources: [3], [6]

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Safety justification and other records

Records complement each other with distinct functions.



Assessment area	Project implementation
Risk assessment	Analyse hazards and evaluate risk reduction.
Safety justification	Connect the safety argument and supporting evidence.
Instructions	Explain safe tasks and remaining conditions.
Passport	Record identity and equipment-specific data.
Conformity evidence	Certificate or declaration under the applicable procedure.

An existing risk assessment is important input, not automatically the complete EAC record set. A passport does not replace hazard analysis. Instructions explain implementation in use; the safety justification makes the engineering basis visible. Test reports support specific features under defined conditions. Conformity evidence has its own legal function. Use consistent model names, limits and revisions. Integrate component records into the overall argument without silently assuming interfaces are safe.

In practice

Avoid conflicting records by using a controlled product data source.

EAC marking

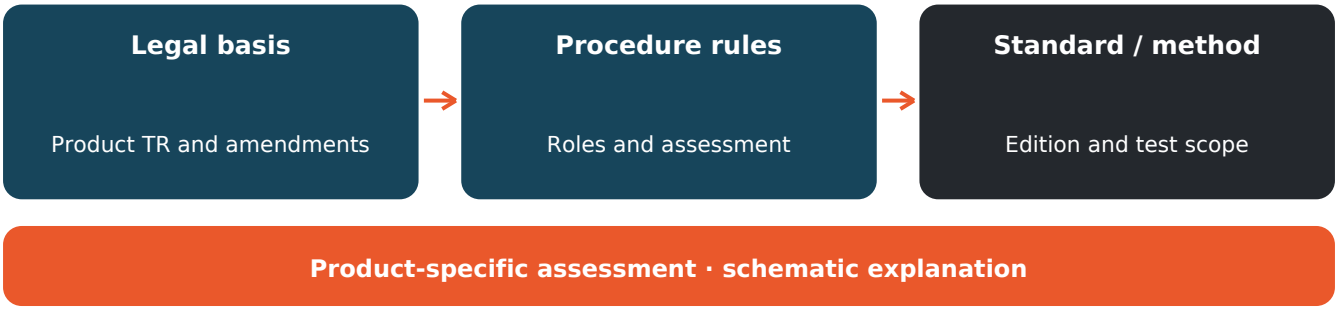
The EAC mark follows confirmed conformity with applicable TRs and marking rules. It concerns covered products after certification or declaration; safety justification alone does not authorise marking. Decision 711/2011 governs the mark. Exclusion from a particular TR does not by itself authorise EAC marking.

Sources: [13]

SAFETY JUSTIFICATION · EAC HANDBOOK

TR CU 010/2011 and the 2026 regulatory position

Derive product duties from the applicable regulation.



Assessment area	Project implementation
Designation	TR CU 010/2011: machinery and equipment safety.
Development	Plan safety justification during design.
Dossier	Review necessary records for certification and declaration.
36/2026	General start 1 September 2026; consider staged clauses.
Definition	Document or record set with risk and safety information.

Decision 36/2026 clarifies the safety justification concept among other changes. Check applicability by clause and destination. Selected other provisions start in 2028; this does not postpone all requirements universally. Read the original TR with amendments and commencement rules. An older consolidated working copy may omit new provisions. Identify the reviewed regulatory version in the dossier. Build the safety report from actual engineering and evidence, not merely from whether the procedure is called certification or declaration.

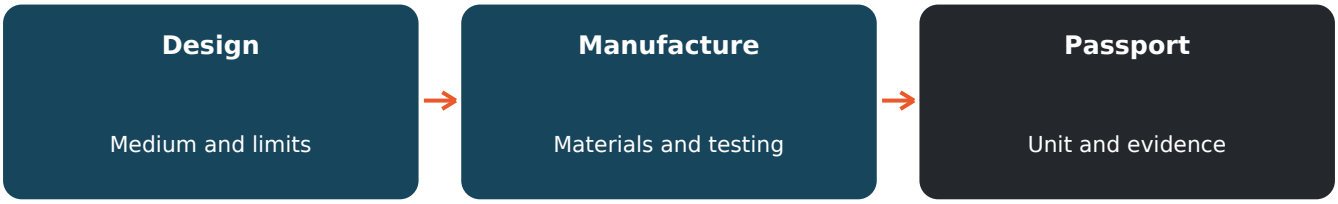
In practice

Record regulatory revision and product revision separately.

Sources: [3], [4], [5]

TR CU 032/2013: pressure equipment safety

Justify design and protection against pressure hazards.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Scope	Equipment type, substance, category and limits.
Design	Strength, stability and intended service life.
Manufacture	Materials, welding, heat treatment and testing.
Protection	Safety equipment and necessary capacity.
Records	Safety justification, passport, instructions and other evidence.

Pressure evidence addresses specific design and manufacture issues. A generic machinery report does not automatically suffice. Connect confirmed operating values with calculations, material evidence and testing. Select safety equipment for actual assembly and substance. A successful pressure test does not describe every service-life or failure scenario. Multi-chamber equipment, assemblies and substance changes need clear linkage. Review the required TR 032 record set by product. National duties for subsequent operation remain separate tasks.

In practice

Use consistent limits in calculations, passport and safety devices.

Sources: [10]

SAFETY JUSTIFICATION · EAC HANDBOOK

Standards: correct designations and current editions

Distinguish legal requirement, standards status and list eligibility.

Reference	Position as of 14 October 2026
GOST 33855-2016	Without R; active in Russia, preparing safety justification.
GOST R 54122-2010	Withdrawn in Russia from 1 September 2017; use GOST 33855-2016 there.
GOST ISO 12100-2013	Active reference for risk assessment and risk reduction.
GOST 2.610-2006	Older reference: check Russian status and current edition.
GOST R 2.610-2019 / 2.601-2019	Russian operating-document editions; review actual applicability.
GOST R 2.610-2026 / 2.601-2026	Regular start 1 October 2027 with early use permitted.

A national standards change does not automatically amend every TR list in all five states. Determine the actual normative basis and dates for the project. Use full designations. Explain actual implementation of safety requirements; naming a GOST title does not prove conformity.

Standards plan

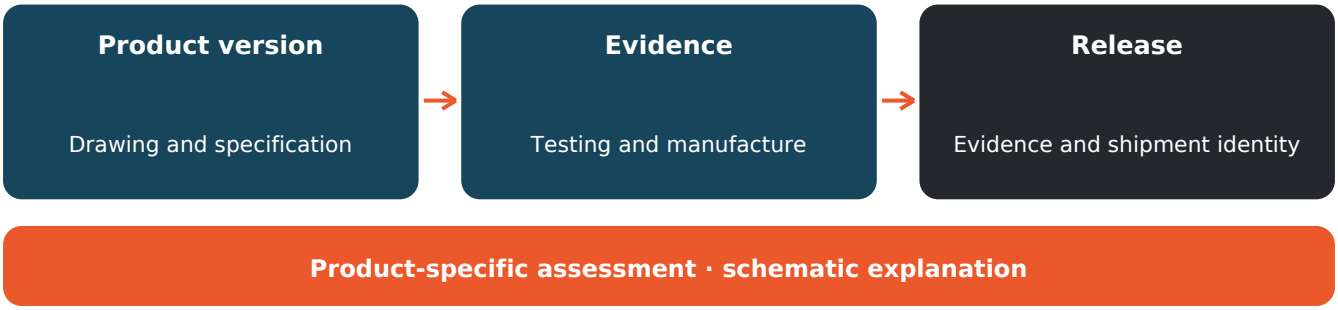
Record edition, country, list linkage and project use clearly.

Sources: [6]-[9], [14]-[16]

SAFETY JUSTIFICATION · EAC HANDBOOK

Understanding full and concise presentations

Scope follows the necessary safety evidence.



Assessment area	Project implementation
Complete	Argument and evidence for actual scope.
Concise	References to controlled evidence rather than needless duplication.
Declaration	No general exemption from technical evidence.
Record set	Connect sufficient traceable technical records.
Limit	Editing must not hide unresolved evidence.

The website distinguishes full and abbreviated safety justifications. These labels do not automatically describe different statutory evidence levels. A concise main report may refer to complete calculations and test reports. Declaration likewise requires compliance with the eligible evidence route. Do not market a concise edition as requiring no evidence. Agree necessary scope before ordering with technical owners and procedure participants. Coverage, traceability and actual safety matter more than page count or sales terminology.

In practice

A concise report is possible; unsupported safety is not an acceptable shortcut.

Sources: [1], [6]

SAFETY JUSTIFICATION · EAC HANDBOOK

Using an existing CE risk assessment

Reuse technical inputs and resolve gaps systematically.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Product	Equivalence of model, design and production revision.
Method	Risk assessment and actual protective argument.
Rules	Allocate EU and EAEU requirements separately.
Evidence	Drawings, calculations and complete reports.
Gap	Plan additions, language, approval and procedure.

A sound European risk assessment can supply substantial engineering input. Translation alone does not make it the complete EAC safety justification. Review product equivalence, normative editions and actual coverage. A CE mark alone is not analysable technical input. Transfer existing records into a requirements/evidence matrix. The website links GOST R 54122 with the Machinery Directive; the respective independent legal and standards bases remain decisive. Similar safety principles do not establish mutual recognition.

In practice

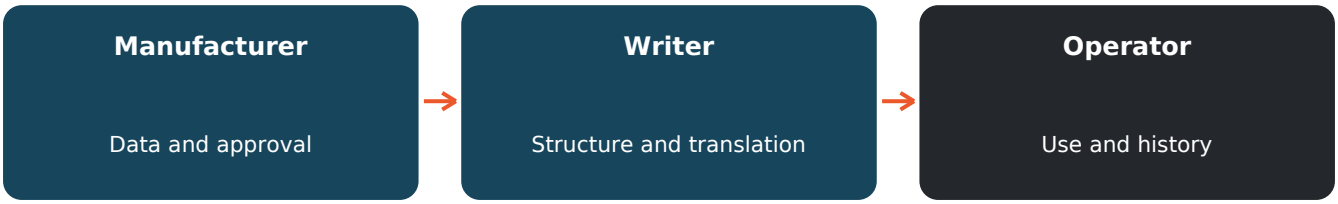
Preserve existing quality and identify additional requirements explicitly.

Sources: [7], [8], [12]

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Roles and technical responsibility

Allocate inputs, decisions and approvals clearly.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Manufacturer	Own configuration, limits and safety argument.
Design	Confirm drawings, materials, tolerances and faults.
Operator	Describe atmosphere, process and actual use.
Lab / body	Assess evidence and handle certification procedure.
Technical writer	Process sources consistently without inventing engineering.

An external provider can support structure, assessment coordination and documentation. Reliable product inputs must still come from accountable technical sources. Decide who confirms assumptions and who implements safeguards in the design. Reconcile purchasing records with actual component revisions. Multi-supplier assemblies need clear overall technical ownership. The applicant arranges the eligible conformity route; that does not replace manufacturer approval of a design change. Record approvals with name, role, date and product revision.

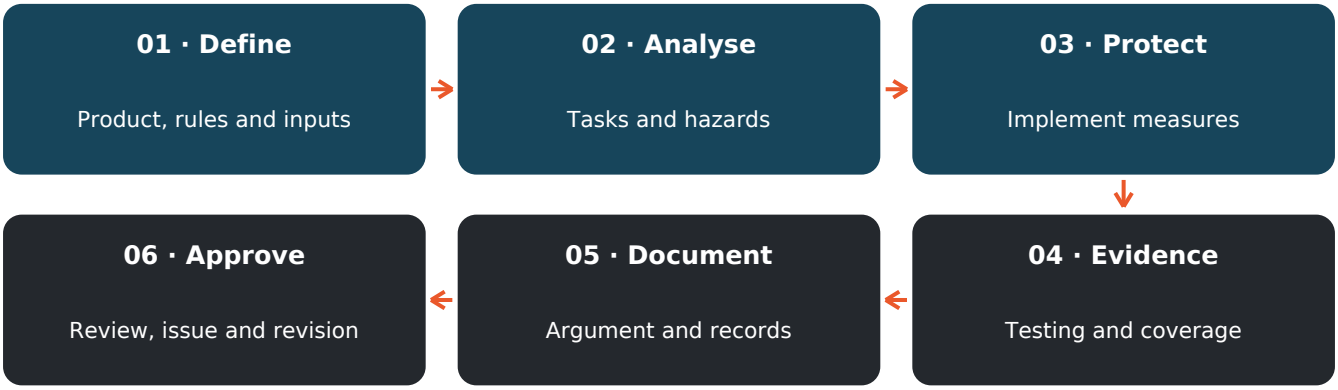
In practice

An unresolved item without an owner often delays completion longer than the analysis.

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Workflow from design to approval

Six project phases with clear decisions.



Assessment area	Project implementation
1 · Define	Determine boundaries, regulations and inputs.
2 · Analyse	Capture tasks, hazards and scenarios.
3 · Protect	Evaluate risk and implement engineered measures.
4 · Evidence	Confirm calculations, testing and coverage.
5 · Document	Align argument, conditions and records.
6 · Approve	Review engineering, close items and issue revision.

Do not start with the cover of a completed justification. First establish which product and tasks need assessment. Schedule technical reviews before design freeze and supply. Reassess implemented measures because they may create new hazards. Testing and technical writing use the same inputs. Distinguish manufacturer approval from certification decisions. Later safety knowledge enters the product dossier through controlled updates. A clear owner for unresolved items prevents evidence gaps surfacing only at completion.

In practice

Record approval status, owners and expected evidence at each phase.

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Technical sources and assessment inputs

Confirmed inputs reduce later rework.



Technical sources and safety argument · AC Inorms



Assessment area	Project implementation
Design	Overview, detail drawings, tolerances and parts list.
Operation	Speed, load, substance, temperatures and phases.
Safeguards	Describe sensors, interlocks and safe response.
Experience	Failures, repairs and confirmed field data.
Evidence	Reports, calculations and complete component records.

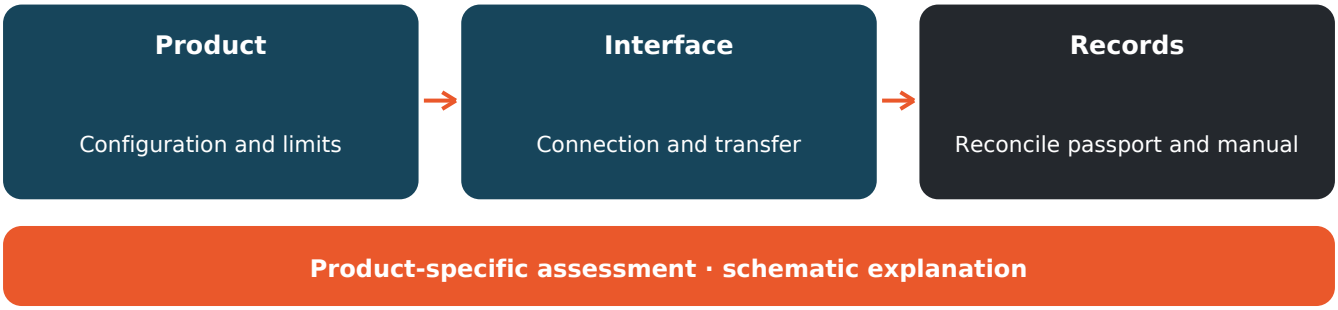
Collect sources with revision, origin and validity. Link supplier claims to the actual installed variant. A material designation without confirmed coating or manufacturing tolerance may be insufficient. Capture operating inputs including start, stop and restart. Failure history helps identify plausible faults, but does not alone prove adequate protection. Drawings and parts lists must show the same revision. Define testing needs where measurements are absent. Distinguish confirmed inputs, technically justified assumptions and unresolved fields.

In practice

An open-input register is more professional than an apparently complete assessment with invented values.

Product boundaries, variants and interfaces

The assessed product must be unambiguously identifiable.



Assessment area	Project implementation
Boundary	Distinguish complete equipment, component and external process.
Variant	Map rating, speed, material and geometry.
Inside / outside	Record internal and external atmospheres separately.
Interface	Link motor, coupling, supply and protective devices.
Worst case	Justify selection and applicability of evidence.

A family report is useful only where common features and safety-relevant differences are visible. The largest model is not always the thermal or mechanical worst case. Different bearings, materials, coatings and operating modes may need separate evidence. Record which variant covers each scenario. A component certificate does not automatically evidence a complete assembly. Allocation tables connect drawings, parts lists, models and reports. Do not silently include remote or optional assemblies in approval.

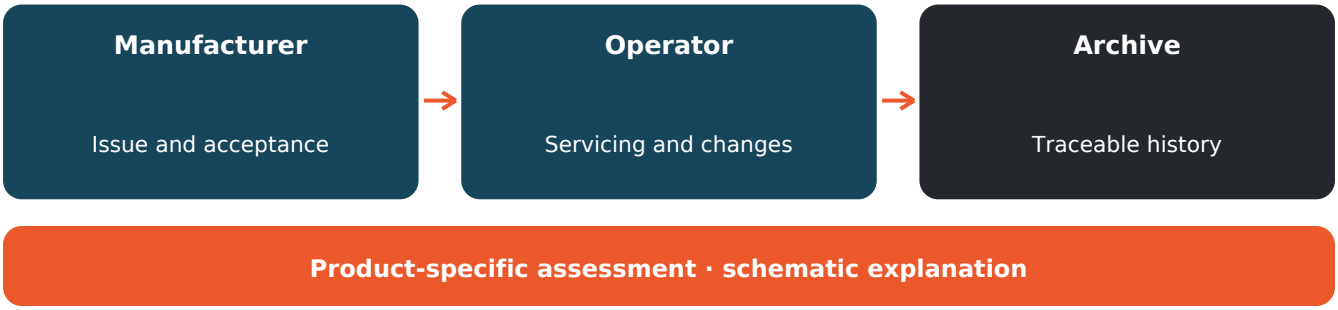
In practice

Justify variant approval with actual limits rather than the word comparable.

SAFETY JUSTIFICATION · EAC HANDBOOK

Capturing life phases and tasks completely

Assessment extends beyond normal production.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Transport	Mass, lifting and safe handling.
Assembly	Installation, connection and adjustment.
Use	Start, normal operation, faults and restart.
Servicing	Cleaning, maintenance, inspection and repair.
End of life	Decommissioning, stored energy and disposal.

Many hazards arise during occasional intervention. An assembly may be well protected in automatic operation yet require dangerous access for cleaning. Describe tasks by life phase, location and energy state. Include dismantling, modification and remaining substances. State which limits the manufacturer confirms and which integration is still needed. Do not invent a universal safe shutdown sequence without knowing the assembly. The task register supplies scenarios, safeguards and the structure of later instructions.

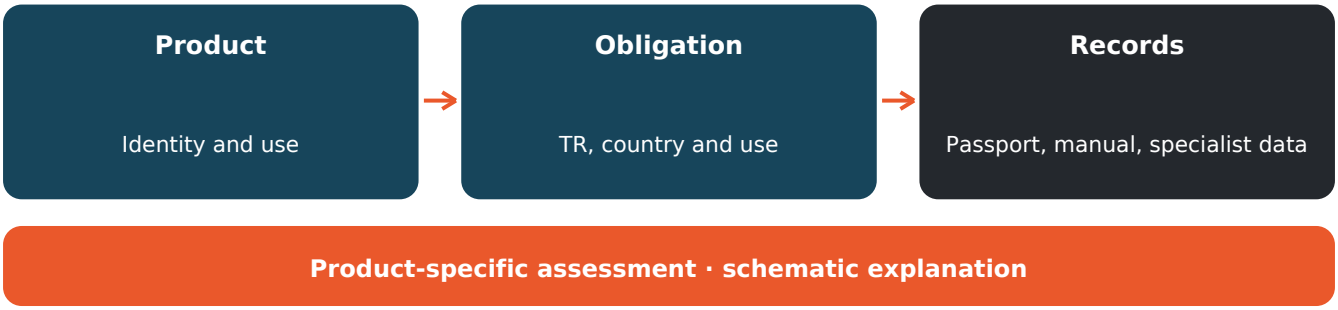
In practice

Review every life phase for tasks, people and energy sources.

SAFETY JUSTIFICATION · EAC HANDBOOK

Intended use and foreseeable misuse

Limits must be realistic and reviewable.



Assessment area	Project implementation
Purpose	Actual intended function and application.
Limits	Load, speed, substance and environment.
Intervention	Permitted tasks and necessary conditions.
Misuse	Plausible deviation based on actual user behaviour.
Exclusion	Technically justified use restriction.

A statement such as trained personnel only is incomplete without tasks and limits. Consider foreseeable intervention under time pressure, faults or cleaning. Misuse does not mean every imaginable action. Justify plausibility through design, controls and experience. Convenient warnings must not hide evident design problems. Link use restrictions with technical capability and protection concept. Process or substance changes can affect the basis. Subsequent instructions describe confirmed use and understandable limits.

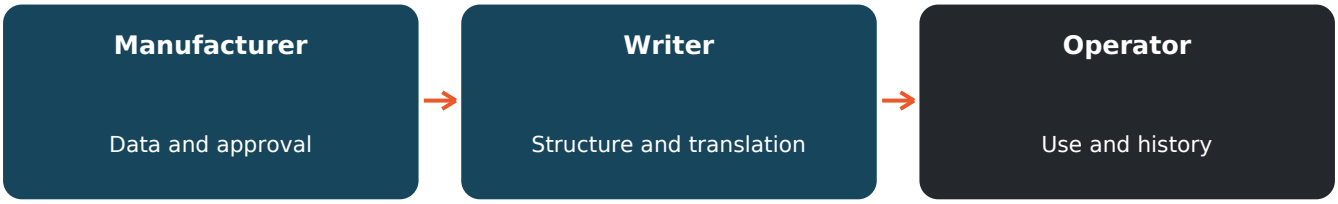
In practice

Describe foreseeable misuse as a scenario rather than dismissing it universally.

SAFETY JUSTIFICATION · EAC HANDBOOK

Personnel, user groups and other people

Consider competence and actual exposure together.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Operation	Routine tasks and operating authority.
Specialist work	Installation, adjustment, servicing and repair.
Surroundings	Other workers, visitors and nearby workplaces.
Prerequisites	Knowledge, competence and necessary physical capabilities.
Information	Suitable instructions, training and understandable warnings.

Training supports safe use without replacing necessary engineering measures. Describe who may enter a hazardous area during each task. Review realistic capabilities and access. Operator qualification does not automatically protect an exposed visitor. Clearly distinguish specialist activities. Instructions and training refer to the same users. For assemblies, manufacturer and operator determine responsibility for integration, competence and organisation. Resolve unclear ownership before approval.

In practice

Document personnel requirements and safeguards separately and review them together.

SAFETY JUSTIFICATION · EAC HANDBOOK

Mechanical hazards and movement

Assess contact, energy and access during actual tasks.



Mechanical design · image: AC Inorms

Source
Energy and hazardous point

→

Task
Person, access and condition

→

Protection
Design and evidence

Product-specific assessment · schematic explanation

Assessment area	Project implementation
Movement	Crushing, shearing, drawing-in and entanglement.
Component	Breakage, ejected parts and falling loads.
Access	Operating position, service opening and adjacent areas.
Condition	Normal operation, start, faults and intervention.
Protection	Design, guards and safe functions.

Identify the hazardous point in a drawing or photo. Mechanical hazard alone is too vague for planning. Consider speed, force, stored energy and access. A removed guard can create a different servicing situation from normal operation. Match measures to tasks and intervention frequency. An impractical protective concept may encourage foreseeable bypassing. Review lifting and stability too. A crushing warning cannot arbitrarily replace necessary design solutions.

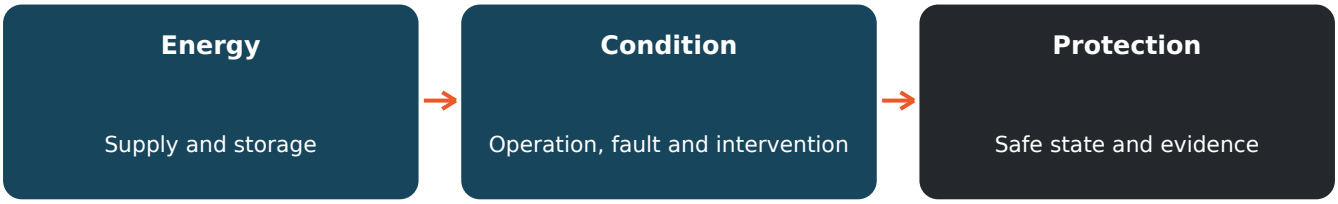
In practice

Link hazardous point and task through a clear scenario ID.

SAFETY JUSTIFICATION · EAC HANDBOOK

Electrical hazards and energy states

Assess contact, faults and remaining energy together.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Contact	Direct and indirect contact with hazardous voltage.
Fault	Insulation, protective conductor and wiring faults.
Energy	Capacitors, batteries and multiple supplies.
Environment	Moisture, conductive substances and installation state.
Evidence	Circuit diagram, protective concept and suitable testing.

Connect electrical safeguards to actual construction. Do not replace specialist testing with a generic risk table. During servicing distinguish a safe energy state from a stop button. Capture multiple supplies and stored energy explicitly. Connection conditions must match supplied configuration. A changed supply can create hazards or protection gaps. Reconcile reports with circuit revision and components. Describe specialist work consistently in instructions and user allocation.

In practice

Emergency stop, stopping and safe energy isolation serve different purposes.

Thermal hazards and fire

Distinguish contact temperature, process heat and fire initiation.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Surface	Accessible hot or cold parts.
Substance	Hot media, steam and released particles.
Fault	Overload, cooling loss and excessive heat.
Environment	Combustibles, deposits and heat dissipation.
Protection	Design, shielding and confirmed monitoring.

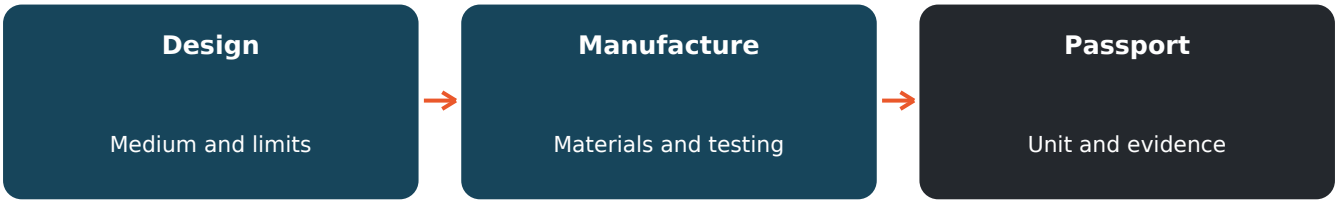
Temperature limits depend on hazard, material, accessibility and procedure. Do not apply a universal value to every surface. Contact-burn risk is not the same as an Ex ignition-temperature limit. Review critical conditions and post-stop heat effects. Guards can affect cooling. Include hot-substance release as a separate scenario. Record measuring locations and conditions. Confirmed limits support suitable protection and actual use/servicing information.

In practice

Keep measured value, assessed condition and acceptance criterion connected.

Pressure, stored energy and failure

Consider pressure hazards at interfaces too.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Storage	Vessels, lines, hydraulics and pneumatics.
Failure	Rupture, leakage, hose whip and ejection.
Process	Substance, temperature, corrosion and load cycles.
Protection	Suitable limitation and safety equipment.
Servicing	Confirmed safe state before intervention.

Pressure can remain after the drive stops. Capture stored energy and actual release arrangements. Safe procedures follow design and assembly knowledge, not a generic template. Operating and design pressure are not automatically identical. Process changes may affect calculations and materials. Evidence suitability and capacity of necessary safety equipment. Pressure testing, non-destructive examination and calculations serve different purposes. Explain their relationship and actual coverage.

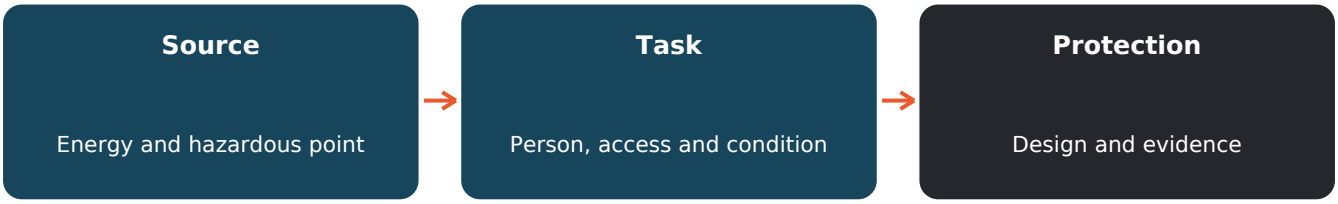
In practice

Do not approve intervention solely from one instrument indication.

SAFETY JUSTIFICATION · EAC HANDBOOK

Substances, emissions and environmental protection

Derive human and environmental hazards from the process.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Substance	Toxic, corrosive, irritant or otherwise hazardous.
Path	Leakage, dust, aerosol and contact.
Operation	Formulation, cleaning, faults and disposal.
Protection	Containment, removal and suitable design measures.
Evidence	Substance inputs, engineering and effectiveness.

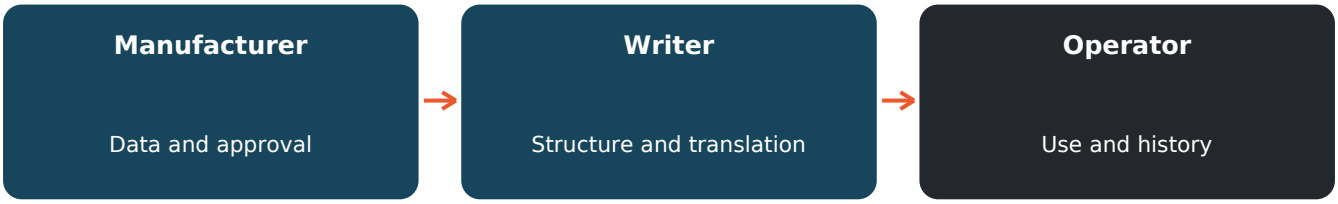
Identify actual substances and release scenarios. Safety data sheets support analysis without answering every equipment-specific question. Include process-generated substances or wastes. Review compatibility and cleaning. Extraction needs confirmed design and limits; a generic ventilation instruction is often insufficient. Environmental management may organise implementation without replacing technical control. Prepare product-specific disposal and residual-substance information. Review new media before further use.

In practice

Review substance, material and cleaning conditions as related inputs.

Noise, vibration and ergonomic hazards

Assess exposure and actual use.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Noise	Emission, operating state and measurement method.
Vibration	Hand-arm and whole-body exposure by use.
Ergonomics	Force, posture, visibility and reach.
Controls	Confusion, information and understandable feedback.
Protection	Design reduction and confirmed operating conditions.

Product noise emission and actual workplace exposure are different quantities. Record method and operating point. Do not use an arbitrary catalogue figure as a complete assembly measurement. For manual tasks consider force, repetition and posture. Controls and indications may influence user errors. Account for realistic capabilities and task scope. Organisational measures support protection without hiding design improvement opportunities. Instructions remain consistent with confirmed emission inputs and limits.

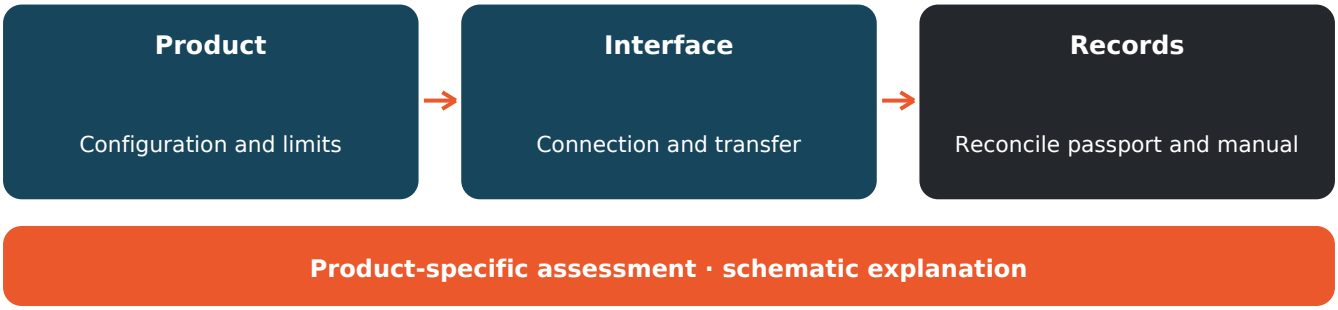
In practice

Connect product inputs and operator assessment through clear responsibilities.

SAFETY JUSTIFICATION · EAC HANDBOOK

Explosion hazards and special protection concepts

Align general safety justification with Ex evidence.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Atmosphere	Gas, vapour, mist, dust and special mixtures.
Source	Hot surface, friction, electrostatics and electrical effects.
Protection	Use area, group and required level.
Interface	Distinguish component protection and whole assembly.
Evidence	Ignition assessment, testing and Ex conditions.

An Ex assembly needs suitable specialist evidence. The general safety report explains integration without replacing that evidence. A certified motor, for example, does not resolve every mechanical pump ignition issue. Combustible dust initially forms the atmosphere; a hot bearing surface may be the actual source. Set required protection before assessment. Process, coating or monitoring changes can affect the Ex argument. Align certificate conditions with instructions, installation and servicing.

In practice

Connect ignition and general safety reports through matching IDs and revisions.

Sources: [11]

SAFETY JUSTIFICATION · EAC HANDBOOK

Estimating risk: method and input quality

Justify severity and probability technically.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Harm	Possible consequences and affected people.
Exposure	Frequency, duration and actual task.
Event	Plausible cause and likelihood of the hazardous sequence.
Avoidance	Real opportunity to avoid or limit harm.
Uncertainty	Missing inputs and effects on conclusions.

The method must suit equipment and available information. Qualitative assessment may be useful, with assumptions explicit. Numbers without reliable inputs create false precision. If using a matrix, define scales and rules beforehand. Compare risks using a consistent method. Infrequent use does not automatically reduce harm severity. Experience helps but needs product and condition linkage. Obtain competent review for complex scenarios. Explain where limited inputs require further investigation.

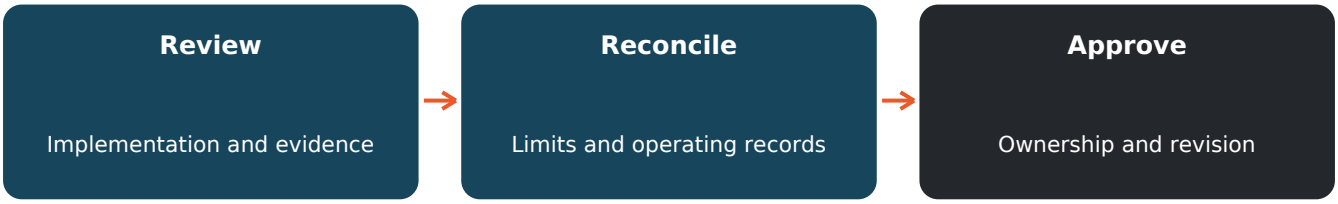
In practice

Do not invent a universal EAC risk score.

SAFETY JUSTIFICATION · EAC HANDBOOK

Evaluating risk and justifying decisions

A ranking alone is not a safety decision.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Requirement	Consider mandatory safeguards and product standards.
Criterion	Explain agreed evaluation rules and limits.
Comparison	Assess before/after conditions consistently.
Decision	Additional measure, evidence or remaining condition.
Approval	Record technical reasoning and accountable owner.

A low matrix rating cannot override a mandatory protective requirement. Review the actual scenario together with applicable technical duties. A measure reduces only the elements it actually affects. A warning does not automatically lower possible harm severity. Record effect with evidence and remaining conditions. Keep uncertain claims unresolved. Severe consequences or complex fault chains may need additional analysis. Trace decisions to actual configuration and evidence.

In practice

State acceptance criterion, protective duty and technical decision separately.

SAFETY JUSTIFICATION · EAC HANDBOOK

Three levels of risk reduction

Connect design, technical safeguards and information.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Design	Avoid hazards or reduce them through engineering.
Technical safeguards	Suitable devices and safe functions.
Information	Explain residual risk, limits and tasks.
Evidence	Review effect and possible new hazards.
Integration	Assembly, users and required operator measures.

Connect the three levels to actual problems. First examine design opportunities to avoid hazards. Match safeguards to access, intervention and possible failures. Instructions communicate remaining information clearly. Additional protection may introduce side effects such as limited visibility or new service access. Reassess use and effectiveness. PPE and training are not universally equivalent to design reduction. Record implementation and evidence, not merely a wishlist of measures.

In practice

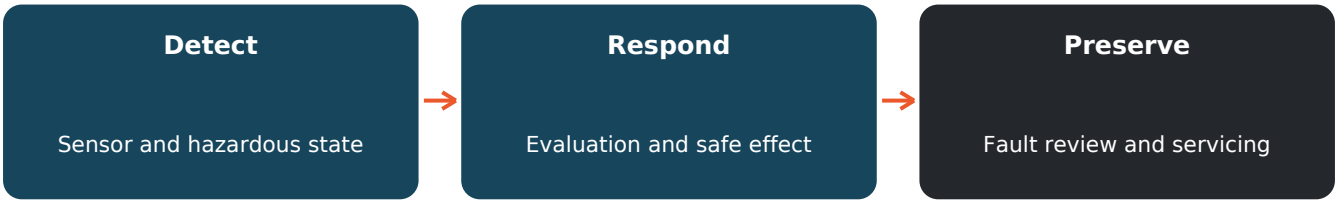
Derive warnings from confirmed engineering assessment.

Sources: [8]

SAFETY JUSTIFICATION · EAC HANDBOOK

Monitoring and safety-related response

The protective function must control the actual hazard scenario.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Detection	Determine variable, location and relevant faults.
Evaluation	Explain threshold, tolerance and processing.
Response	Review timing, shutdown and safe remaining states.
Failure	Sensor break, power loss and common causes.
Preservation	Plan function checks, access control and servicing.

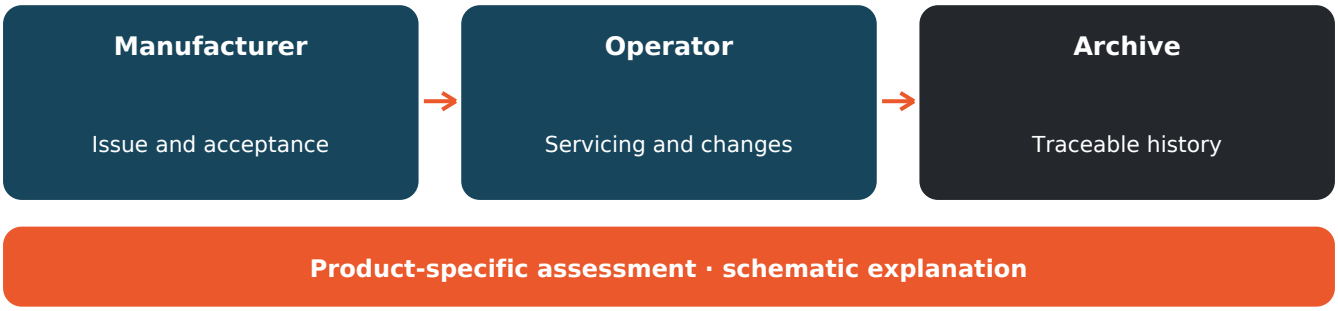
A temperature sensor alone is not effective safety protection. The chain must detect the hazardous state in time and trigger a suitable response. Run-down or heat accumulation may continue after shutdown. Check whether one fault affects both machinery and monitoring. State the basis for required reliability and assessment depth. Do not invent a universal SIL or PL value for every product. Control settings, software revision and bypass opportunities. Connect necessary periodic checks with instructions and ownership.

In practice

An alarm indication and effective protective shutdown are different functions.

Reliability, failures and service life

Distinguish functional failure and safety-critical failure.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Function	Required tasks and protective features.
Failure	Explain critical and other failure modes.
Limiting state	Wear, condition criteria and permitted use.
Service life	Justified design life, resource and influences.
Preservation	Servicing, inspection and suitable spares.

Reliable is not automatically safe: a function may reliably create the wrong state. Identify relevant failures and consequences. Describe limiting conditions with inspectable features, not only a calendar date. Service-life assumptions consider load, substance, wear and maintenance. Link inputs to actual component revision. Recurring checks need clear scope. New failure experience triggers review. Keep safety duties and quality metrics separate so a good production yield does not hide inadequate protection.

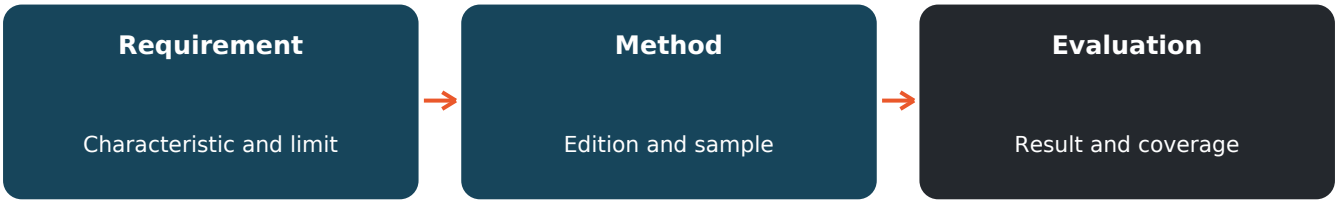
In practice

Allocate critical faults and necessary response consistently in report and instructions.

SAFETY JUSTIFICATION · EAC HANDBOOK

Evidence, calculations and test planning

Assign suitable evidence to every claim.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Drawing	Show materials, clearances and protective features clearly.
Calculation	Record model, assumptions, inputs and limits.
Test	Define representative configuration and conditions.
Supplier	Complete reports and actual component revision.
Gap	Keep unconfirmed claims as unresolved items.

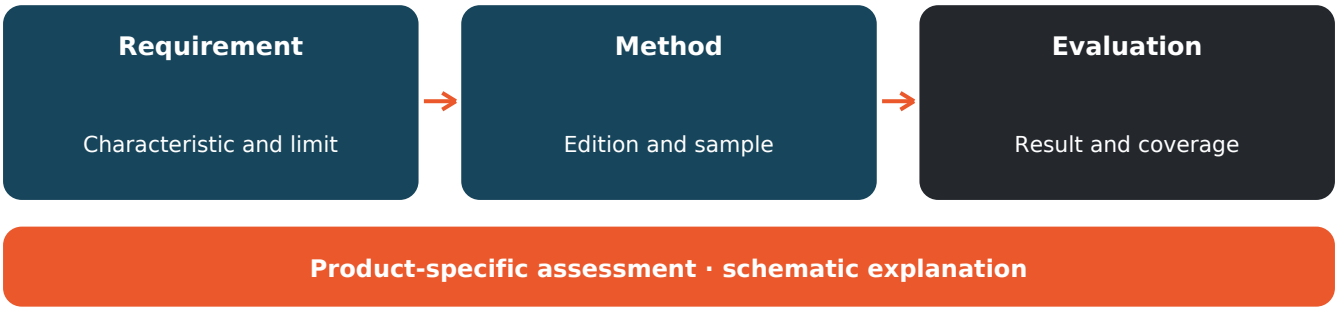
Select evidence to match the claim. A drawing may show a clearance without proving every temperature effect. Calculations need reliable inputs and justified model boundaries. Plan tests with the laboratory to cover critical conditions and relevant variants. Field history may support an argument without replacing absent normative testing. Identify acceptance criteria, owners and required revisions. Record sample changes before extending results to production. This gives the technical report a reviewable argument rather than loosely attached files.

In practice

Record an evidence ID in every scenario row.

Documenting testing correctly

Keep result, test condition and applicability connected.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Sample	Model, serial number, drawing and deviations.
Procedure	Standard reference, method and instruments.
Condition	Load, substance, environment and fault state.
Result	Value, uncertainty where relevant and criterion.
Coverage	Assessed variants and technical limitations.

An instrument photo without conditions is not a reliable report. Record configuration and setup so the result can be understood. Justify the selected adverse condition. Measurement duration and location may influence results. Assess sample deviations before approval. Where a setup represents only part of the product, justify applicability. Keep unsuccessful testing and engineering corrections visible in development history; an attractive final value alone gives an incomplete account.

In practice

Compare the test report with actual supply configuration before completion.

SAFETY JUSTIFICATION · EAC HANDBOOK

Residual risks and operating information

Communicate remaining risks clearly for the actual product.



Assessment area	Project implementation
Risk	Scenario remaining after implemented measures.
Limit	Permitted conditions and necessary integration.
Action	Confirmed safe task and competence.
Warning	Hazard, consequence and actual avoidance.
Reconciliation	Report, instructions, passport and marking.

Residual risk is not a collective label for unresolved design problems. Record what actually remains after suitable measures. Place information where users need it for tasks. A generic warning page cannot replace a missing safe procedure. Communicate installation conditions to designer and operator. Instructions state limits for the assessed configuration. Translation preserves values and meaning. Update affected records under control when knowledge changes. Approval checks whether risk information supports understandable, technically correct action.

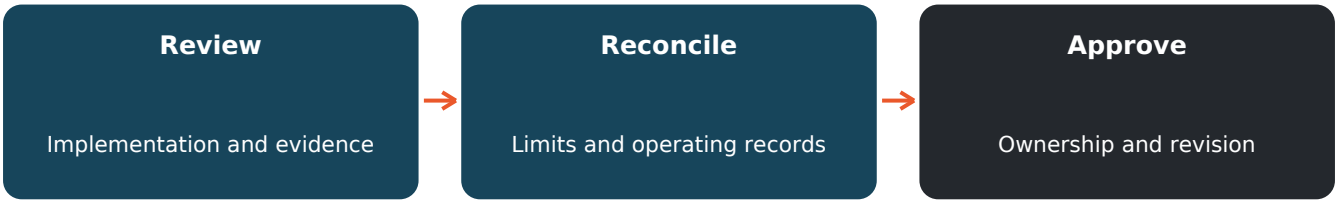
In practice

Information must be actionable and must not conceal absent evidence.

SAFETY JUSTIFICATION · EAC HANDBOOK

Commissioning and safety management

Connect technical approval and operating readiness.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Installation	Confirm supply, connections and interfaces.
Checks	Necessary function and protective checks.
Personnel	Competence, ownership and familiarisation.
Emergency	Align equipment behaviour with local arrangements.
Release	Resolve deviations and record conditions.

Commissioning does not replace an incomplete safety assessment. It verifies correct integration and implementation of confirmed conditions. Manufacturer and operator define tasks before supply. Review safeguards without inventing unsafe, unconfirmed test instructions. Align emergency organisation and product response. Assign owners and release criteria to deviations. Start operation with traceable handover of instructions, evidence and service information. Review national operator duties additionally.

In practice

Product conformity and site operating release remain separate decisions.

SAFETY JUSTIFICATION · EAC HANDBOOK

Allocating quality and environmental management

Management processes support continued technical safety.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Quality	Control safety-related manufacturing characteristics.
Environment	Manage substances, wastes and release risks.
Supplier	Technically approve alternatives and changes.
Information	Review failures, complaints and new inputs.
Evidence	Actual implementation rather than a certificate cover.

The website includes quality and environmental management. Link them to actual protection. This does not establish universal ISO 9001 or ISO 14001 certification duties for every EAC product. Production control helps reproduce assessed characteristics. Connect environmental measures with engineering and real substance paths. Complaints and field failures supply important new information. A management system can organise handling without alone proving individual design safety. Link safety-related decisions to technical owners and evidence.

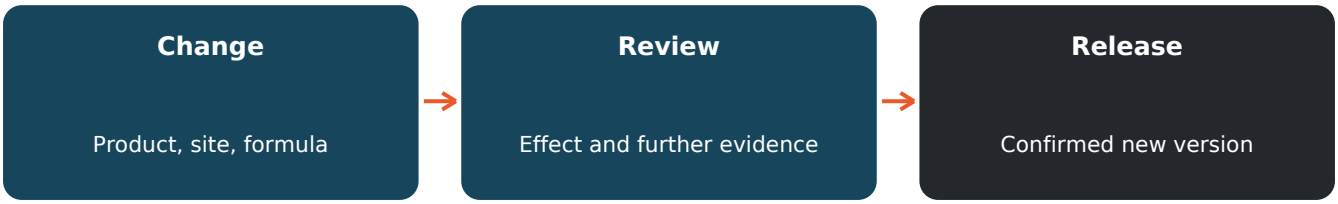
In practice

Organisational support and technical product evidence are different levels.

Sources: [1]

Changes and reassessment

Review modification, repair and new knowledge under control.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Engineering	Material, geometry, bearings, software and protective function.
Process	Substance, speed, temperature and operating mode.
Knowledge	New failures, measurements and safety information.
Records	Effects on report, instructions and certificate.
Decision	Review affected scenarios and involve the body.

Change control starts before implementation. A coating can alter hazards, a bearing temperature and software protective response. New safety knowledge may trigger review even without modification. Identify affected scenarios and evidence in the change log. For certificates, involve the issuing body for safety-related changes. For declarations, review evidence and registration under the applicable procedure. Do not apply a certificate number to technically unreviewed variants. Archive old and new revisions with the decision and communication route. Justify reassessment scope technically.

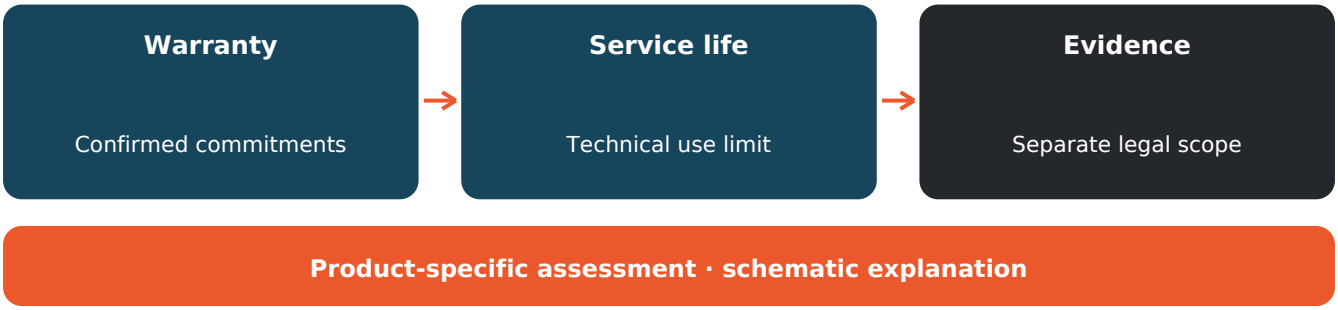
In practice

Assess changes before manufacture, documentation and supply.

SAFETY JUSTIFICATION · EAC HANDBOOK

Originals, copies, revisions and retention

The assessed configuration must remain reconstructable.



Assessment area	Project implementation
Original	Designer/developer as original holder under TR 010.
Copy	Manufacturer and operator receive the required edition.
Additional	Other parties according to tasks and agreed handover.
Revision	Change, approval, product revision and language.
Archive	Determine retention and access under applicable rules.

The website mentions design office or manufacturer and copies for trade/export. Allocate actual roles more precisely: TR 010 identifies the developer as original holder and copies with manufacturer and operator. These roles may coincide. Supply additional copies according to tasks and agreement. Define controlled revisions and obsolete-edition handling. Electronic archiving supports access without overriding required delivery media for other records. Connect report, schedules, decisions and evidence to delivered configuration.

In practice

Do not invent universal retention periods without product, procedure and country linkage.

Sources: [3]

SAFETY JUSTIFICATION · EAC HANDBOOK

Template 1: safety justification structure

Annotated structure for a product-specific dossier.

Section	Content and technical linkage
1 · Introduction / approval	Product, scope, author, version and status.
2 · Parameters / properties	Models, limits, variants and input sources.
3 · Safety concept	Design, hazards and protective principles.
4 · Reliability	Failures, service life and limiting conditions.
5 · Personnel	Users, tasks and competence.
6 · Risk assessment	Scenarios, method, estimation and evaluation.
7 · Safeguards / evidence	Measures, implementation and technical support.
8 · Commissioning	Integration, function checks and handover.
9 · Management	Manufacturing quality and relevant environmental measures.
10 · Information review	Experience, new inputs and change needs.
11 · Residual risks	Conditions, instructions and operator measures.
12 · Annexes / archive	Drawings, reports, references and revisions.

This structure incorporates sector-page topics and adds evidence linkage. It is not a rigid form prescribed unchanged for every item. Adapt, combine or justify inapplicable sections by product. Controlled references avoid needless duplication.

Before starting

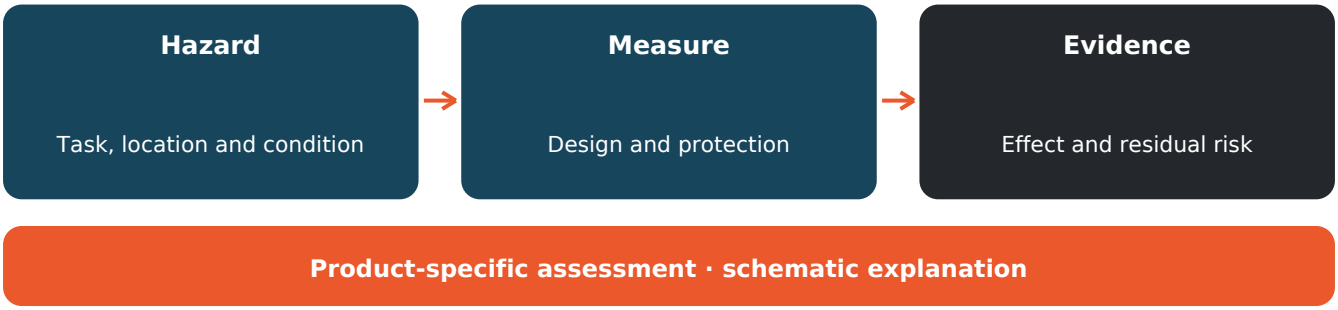
Agree scope and necessary depth with technical owners and procedure participants.

Sources: [1], [6]

SAFETY JUSTIFICATION · EAC HANDBOOK

Template 2: hazard and risk register

A scenario entry connects task, condition and protection.



Field	Entry / evidence
Product / model / variant / revision	_____
Scenario ID / life phase / task	_____
Hazard / location / energy source	_____
Exposed people / harm	_____
State / event / foreseeable misuse	_____
Risk estimate / method / assumptions	_____
Measure ID / actual implementation	_____
Evidence ID / revision / acceptance criterion	_____
Risk after measures / residual risk	_____
Instructions / condition / approval status	_____

The fields do not prescribe a universal method. Add agreed scales and technical reasoning. Inapplicability needs explanation; missing inputs remain open. A competent reviewer checks completed entries.

Template, not product evidence

Do not copy hazard IDs or risk values uncritically to other machines.

Template 3: requirements and evidence matrix

Show how requirements, measures and evidence connect.

Field	Example structure / entry
Requirement ID	TR article / product duty / source.
Applicability	Affected assembly, variant and life phase.
Standards reference	Full edition and reviewed list revision.
Safety feature	Actual design or required function.
Scenario / measure	R-___ / M-___; risk register reference.
Evidence	E-___; drawing, calculation or report with revision.
Criterion	Acceptance rule from applicable procedure.
Coverage	Model/use limits and applicability.
Gap	Missing input / owner / date.
Decision	Confirmed / open / limited; reviewer and date.

The matrix makes a concise main document reviewable where complete evidence is linked under control. It does not replace absent evidence. A standards number without an identifiable safety feature remains incomplete. Trace changes to affected scenarios and evidence.

Review question

Can a reviewer trace the requirement to actual design and its supporting evidence?

Template 4: approval and change record

Printable aid for controlled decisions and open items.

Approval of an assessment revision

Review field	Entry / status
Product / variants / revision	_____
Complete technical sources	_____
Scenarios and measures reviewed	_____
Evidence and coverage confirmed	_____
Instructions / passport / marking reconciled	_____
Open items / limitations	_____
Approved by / role / date	_____

Change control

Change	Affected risks / evidence	Decision
_____	_____	_____
_____	_____	_____
_____	_____	_____

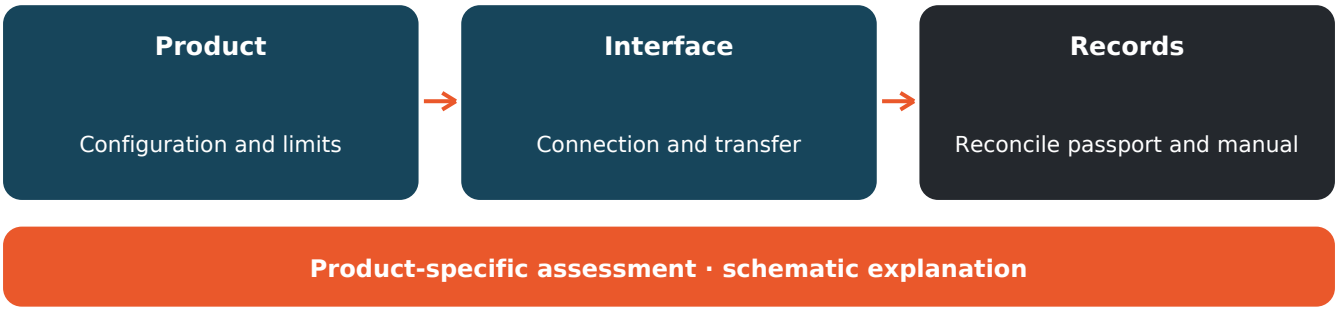
Complete approval fields only after technical review. Link every change to product and reasoning. A delivery date or polished translation does not close unresolved engineering evidence. Handle certificate and declaration changes through their eligible procedures.

Status rule

Distinguish draft, technically reviewed and approved explicitly.

Case 1: automatic packaging line

The complete line needs a traceable interface assessment.



Assessment area	Project implementation
Starting point	Conveyors, packing station and palletising as supply scope.
Tasks	Normal operation, cleaning, faults and format changes.
Hazard	Drawing-in, crushing, restart and falling loads.
Protection	Plan access, controls and safe intervention together.
Evidence	Support overall function and component limits.

Illustrative case without an assembly approval: three machines have their own records. Integration creates new access and a common material flow. Reuse component assessments while retaining their limits. The integrator captures interface tasks and blockage removal. Review safe response and restart for actual controls. Earlier component certificates alone do not settle these questions. Connect interface drawing, scenarios, measures and evidence. Overall instructions implement confirmed tasks and roles.

In practice

A collection of component records is not yet a justified overall safety argument.

SAFETY JUSTIFICATION · EAC HANDBOOK

Case 2: pressure equipment assembly

Connect substance, design, manufacture and safety equipment.



Pressure equipment · image: AC Inorms

Design
Medium and limits

→

Manufacture
Materials and testing

→

Passport
Unit and evidence

Product-specific assessment · schematic explanation

Assessment area	Project implementation
Starting point	Vessels, piping and safety equipment.
Inputs	Pressure, temperature, substance and load cycles.
Hazard	Failure, leakage, hot substance and remaining pressure.
Evidence	Calculations, materials, welding and test reports.
Implementation	Align passport, instructions and integration conditions.

Example: an assembly is offered for a different substance. Geometry is unchanged, but compatibility and process conditions may differ. Review effects on design and safety equipment. Earlier successful pressure testing does not replace this assessment. Link updated calculations with actual manufacture and testing revision. Align passport and instructions to matching limits before supply. Conformity form follows TR 032 and actual classification, not report length.

In practice

A changed substance may require reassessment despite unchanged hardware.

Case 3: process pump with Ex requirements

Assess general machinery risks and ignition hazards in parallel.



Assessment area	Project implementation
Starting point	Pump with drive, coupling and process connections.
General	Access, hot surfaces, release and remaining energy.
Ex	Atmosphere, sources and required protection level.
Evidence	Mechanics, thermal effects, safeguards and component limits.
Reconciliation	Connect safety justification and ignition report.

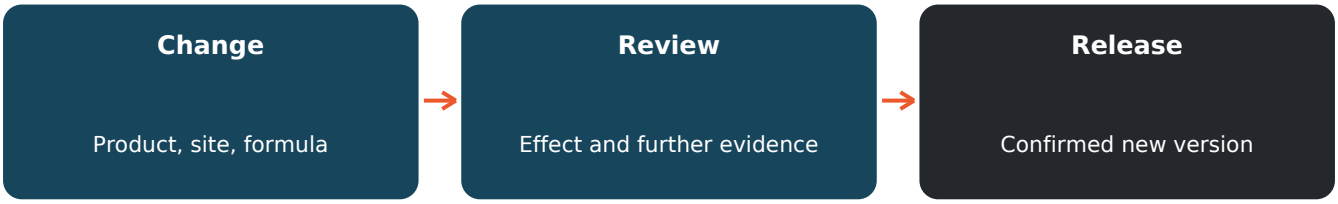
Example: the Ex motor is already documented. The pump needs further seal and dry-running assessment. Access to the coupling and substance release remain general safety matters too. Both reports share product and scenario IDs. Technical review determines measures and evidence. A hot-surface warning does not automatically resolve Ex ignition suitability. Review process changes in both arguments. Instructions describe confirmed limits and protective conditions for the same configuration.

In practice

Aligned inputs prevent contradictory general and Ex safety claims.

Case 4: modification of existing machinery

Reassess changes and continued use technically.



Product-specific assessment · schematic explanation

Assessment area	Project implementation
Starting point	New controls and increased rating in existing equipment.
Difference	Old/new configuration and technical limits.
Risks	Speed, access, braking and protective functions.
Evidence	Affected scenarios and additional testing.
Procedure	Review conformity and national operating effects separately.

Example: an operator plans a productivity modification. Review load, controls and protective behaviour before implementation. An unchanged machine name does not preserve previous coverage automatically. Link affected scenarios to evidence and revised instruction sections. A repair entry alone would be insufficient. Technical classification clarifies ownership and necessary procedures. This guide does not universally approve modifications under earlier certificates. Review national operator duties additionally.

In practice

Decide modification requirements before ordering and installing new components.

Ten common errors and their correction

Connect formal records with reliable safety arguments.

Error	Correction
TR CU 010/2010 copied	Use correct number 010/2011.
GOST R 33855 specified	State GOST 33855-2016 without R.
54122 treated as current Russian basis	Consider withdrawal and GOST 33855-2016.
Concise edition without evidence	Controlled references and complete support.
CE mark treated as full risk assessment	Review technical records and EAEU gaps.
Only normal operation assessed	Include assembly, faults, service and end of life.
Warning reduces every risk rating	Justify actual effect technically.
Components assumed safely integrated	Assess interfaces and overall function.
Management certificate proves product safety	Keep technical evidence separately.
Same name assumed to preserve assessment	Review engineering, process and new knowledge.

Use corrections as review questions. A formally complete report may remain technically incomplete. Examine unsupported extensions across variants, conditions and standards editions. Handle absent evidence as unresolved items.

Core rule

No safety claim without product linkage and traceable support.

FAQs, costs and scheduling

Determine scope from inputs, engineering and procedure requirements.

Is a safety justification itself an EAC certificate?

No. It provides technical argument and evidence for the actual procedure. Certificates and declarations have their own roles and rules.

Is an existing risk assessment sufficient?

It is important input. Reconcile revision, requirements, evidence and additional EAEU records.

Can the report cover several models?

Yes, with traceable variant linkage and justified coverage of safety-related differences.

When are updates needed?

For relevant product/process changes, repair effects, new safety knowledge and changed duties where applicable.

Work driver	Quotation scope
Inputs	Existing drawings, analysis and reports.
Engineering	Complexity, variants and technical reviews.
Documentation	Languages, appendices, revisions and approvals.
Additional services	Lab, samples, calculations and certification separately.

No universal figures

The sector page states no fixed universal costs or turnaround. Scope and missing evidence determine the schedule.

Sources: [1]

Worksheet: intake and approval

Printable aid for manufacturers and technical project owners.

Intake	Entry
Manufacturer / contact	_____
Product / models / variants	_____
Function / limits / users	_____
Destination / supply / date	_____
TR / standards plan / existing CE records	_____
Drawings / passport / instructions / reports	_____

Approval checklist

Review item	Status / owner
Complete life phases and hazards	_____
Traceable method and assumptions	_____
Implemented/evidenced effective measures	_____
Covered variants and interfaces	_____
Residual risks carried into instructions	_____
Standards status and open items resolved	_____
Manufacturer approval / procedure alignment	_____
Revision / archive / handover arranged	_____

Completion

Product revision: _____ Date: _____

Technically approved by: _____

SAFETY JUSTIFICATION · EAC HANDBOOK

Sources and legal foundations

Linked foundations for product-specific assessment.

[1] AC Inorms: safety justification for EAC

Open original source

[2] AC Inorms: regulations archive

Open original source

[3] Adilet: TR CU 010/2011, original/consolidated text

Open original source

[4] EEC: TR 010 and amendment acts

Open original source

[5] EAEU: Decision 36/2026, official amendment

Open original source

Official record and commencement

[6] Rosstandart: GOST 33855-2016, active status

Open original source

[7] Rosstandart: GOST R 54122-2010 and withdrawal

Open original source

[8] ISO: ISO 12100:2010, risk assessment and reduction

Open original source

[9] Rosstandart: GOST ISO 12100-2013

Open original source

Official regulations with amendments and commencement are authoritative. Older consolidated texts may omit new provisions. Check standards status, country and list entry separately. Unnumbered procedures, templates and cases are original editorial aids.

Sources: [1]-[9]

Further sources and image credits

Linked foundations for product-specific assessment.

[10] Adilet: TR CU 032/2013, pressure equipment

Open original source

[11] EEC: TR CU 012/2011, Ex equipment

Open original source

[12] EU: Machinery Directive 2006/42/EC

Open original source

[13] EAEU: EAC mark, Decision 711/2011

Open original source

[14] Rosstandart: GOST 2.610-2006, Russian status

Open original source

[15] Rosstandart: GOST R 2.610-2026, start in 2027

Open original source

[16] Rosstandart: GOST R 2.601-2026, start in 2027

Open original source

[17] EAEU: conformity evidence registry

Open original source

[18] Rosstandart: official standards search

Open original source

As of 14 October 2026. Safety-justification cover and additional machinery, pressure-equipment and Ex illustrations: ac-inorms.com. Diagrams, tables and worksheets are original work. No complete standards texts, specimen certificate or approval of actual equipment.

Sources: [10]-[18]

SAFETY JUSTIFICATION · EAC HANDBOOK

Your safety justification with AC Inorms

Connect design, risk and evidence in a reliable project dossier.



Safety justification · image: AC Inorms

AC Inorms supports manufacturers and exporters in structuring technical records and coordinating necessary evidence. Product boundary, regulations, variants and input quality determine scope. Align existing analyses, drawings, calculations and reports to the same revision. Identify missing information and extra testing explicitly. Prepare safety justification, passport and instructions consistently. Manufacturer technical approval and the actual certification/declaration procedure remain separate steps. Clarify scope and responsibilities in advance for a reliable quotation.

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Web: ac-inorms.com

For the initial enquiry

Send the page-47 worksheet with datasheet, model list, drawings and complete existing reports.

Sources: [1], [2]