
HND. COMPLIANCE SERIES

EN 16647-1:2025

Compliance Checklist for Tabletop Ethanol Fireplaces

A Practical Buyer & Product Development Guide for EU Importers, Brands and Distributors

WHAT THIS GUIDE DOES

Turns the new standard into a practical pre-development and sourcing checklist: scope, product architecture, fuel system, glass, stability, combustion, labelling, manuals, factory production control and buyer documentation.

Prepared for professional sourcing and product-development teams

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Does EN 16647-1:2025 apply to your product?

EN 16647-1:2025 covers manually operated decorative fireplaces for domestic use that burn liquid alcohol without a flue. For a buyer, the first compliance decision is not the test list - it is whether the intended product actually sits inside this scope.

In scope - typical buyer profile

- ☐ Decorative fireplace intended for domestic use.
- ☐ Liquid alcohol fuel; the standard defines fuel as an alcohol derivative with at least 91% ethanol by volume.
- ☐ Manual user interaction for ignition, filling, refilling or extinguishing.
- ☐ Free-standing, wall-mounted, built-in or tabletop formats.
- ☐ Ready-to-use fireplace where the fuel box is one unit or an integral component.
- ☐ Verified thermal output at or below 4.5 kW, with no defined heating function.

Important exclusions

- Products specifically designed for cooking or food warming.
- Fireplaces for boats, caravans, other vehicles or outdoor areas.
- Products above 4.5 kW or designed with a defined heating function.
- Separate remote fuel-tank systems outside the fireplace.

TABLETOP DEFINITION

The standard defines a tabletop fireplace as an appliance placed exclusively on furniture or wall shelves, as defined by the manufacturer, and not in the walkable area of a room. That intended-use statement should be aligned across design, packaging and the manual.

Buyer note: a product marketed for both indoor and outdoor use needs careful scope review. EN 16647-1:2025 explicitly excludes fireplaces for outdoor areas, so do not assume one EN test program automatically covers every marketing claim or use environment.

Fuel system, materials and safe operation

Fuel capacity and containment

- Maximum burner volume: 3 litres.
- Maximum total fuel capacity of the fireplace: 10 litres, subject to any lower national or regional limits.
- Fuel storage container must be leak-proof.
- A secondary containment chamber must hold at least 110% of the actual filling volume and be designed so excess fuel can be checked and removed.
- A durable fill-level indicator or fill mark is required to help prevent overfilling.

Material and burner design

- Fuel-contact parts are specified as X5CrNi18-10 / 1.4301 stainless steel under EN 10088-3, unless another material is proven suitable for the required thermal, chemical, mechanical and corrosion performance.
- Fuel-tank welds must be continuously welded.
- Burner filling materials, if used, must remain stable under fuel and thermal exposure and are subject to durability checks.
- The fireplace needs an easy-to-use closing mechanism and an extinguishing system that meets the shutdown test.

Ignition and refilling controls

- Ignition must be possible from a horizontal distance of at least 140 mm between the user's handle and burner opening.
- The user must have visual contact with the flame during ignition.
- Warning marking must clearly prohibit filling while the fireplace is hot or operating.
- The manual must explain safe refilling, excess-fuel removal and the risk of igniting spilled fuel.

DESIGN REVIEW QUESTION

Can a new user understand where to fill, how much to fill, how to check overflow, how to ignite, and how to extinguish - without improvising? If the answer depends on an accessory, that accessory and its instructions should be part of the product system.

Glass, flame access, stability and spillage

Flame access and glass screens

- Access to the fire must be obstructed from at least one side; tabletop fireplace housings must restrict access from at least two sides.
- If surfaces could be used as a repository, flame access must be blocked from two sides.
- For open-top fireplaces, the majority of the flames should be shielded by screens.
- Where glass is used, accepted constructions include glass-ceramic, borosilicate or tempered glass.
- Glass screen thickness: at least 4 mm; the design must tolerate operating temperature, thermal expansion and thermal shock without damage, and exposed edges must not be sharp.

Tabletop stability testing - buyer-level summary

- Tilting and sliding test: tabletop units are tested on an inclinable smooth surface up to 10 degrees.
- Movement-from-impact test: verifies movement and fuel leakage under impact.
- Tilting-from-impact test: verifies no spillage when impact creates a tipping load.
- Spillage test: checks that the product neither slips nor tips and that fuel does not spill when tilted toward critical directions.

Draft protection

The fireplace must control flame flare under normal air-draft conditions. The operating test uses airflows of 2.0 m/s and 0.5 m/s and evaluates critical approach angles at different fuel levels. The flame must remain within the declared safety distance and, in any case, that distance cannot exceed 50 cm.

BUYER TAKEAWAY

Do not evaluate stability by product weight alone. Base footprint, center of gravity, burner position, glass arrangement and fuel containment all affect the test outcome. A visually similar redesign can require fresh verification.

Performance limits buyers should know

Fuel consumption and output

The complete fireplace - not the burner alone - is used to verify fuel consumption and thermal output. The design must not show a progressively increasing fuel-consumption pattern that could indicate burner runaway, and verified thermal output must remain at or below 4.5 kW.

Carbon monoxide and room volume

Combustion testing was substantially revised in the 2025 edition. The standard sets CO concentration limits over multiple averaging periods and uses measured emissions in a predictive room model. The resulting minimum room volume must be stated on the package and in the user instructions.

Averaging period	CO concentration limit
15 min	< 87 ppm
30 min	< 52 ppm
1 hour	< 26 ppm
8 hours	< 9 ppm

For the 8-hour CO2 test at maximum burner adjustment, the mean CO2 concentration must be below 5,000 ppm. The standard assumes 0.5 air changes per hour in its stated combustion-performance framework.

Extinguishing and relighting

- ☐ Manual shutdown must extinguish the flame in 10 seconds or less.
- ☐ A self-reignition check is performed after shutdown and re-opening.
- ☐ Warm-state relighting is evaluated after one hour at maximum burner adjustment, followed by shutdown and a 3-minute wait before reignition.

WHY THIS MATTERS TO PRODUCT DEVELOPMENT

Burner geometry, fuel absorption, airflow and shielding affect both flame appearance and emissions. Compliance engineering should happen before tooling is frozen - not after a final cosmetic sample has been approved.

Labelling, manuals and factory production control

Rating plate and on-product information

- ☐ Manufacturer or importer name and contact information.
- ☐ Trade name and identification or serial number for batch traceability.
- ☐ Fuel type, maximum fuel volume and burner capacity.
- ☐ Minimum distances to combustible materials.
- ☐ Minimum room volume.

Packaging and instructions

Packaging must carry core safety advice, including the standard number, ventilation/use conditions, warnings against hot refilling or overfilling, movement during operation and leaving children or pets unattended. The manual must cover installation, use, maintenance, emergency extinguishing, fuel storage, ignition/re-ignition, clearances, ventilation, shutdown and inspection of flame screens.

Factory Production Control (FPC)

- Documented procedures for incoming materials/components, production and final inspection.
- Calibration and inspection of measurement/test equipment used for relevant characteristics.
- Production equipment maintenance records.
- Product identification and traceability by production date and place.
- Ongoing checks that declared product characteristics remain consistent in production.

A TEST REPORT IS NOT THE WHOLE FILE

Type testing verifies a defined sample. Buyers should also ask how the supplier controls material grade, thickness, glass specification, burner construction, sealing, labeling and batch traceability after approval. That is where FPC becomes commercially important.

HND buyer-side recommendation: keep a controlled compliance file for each SKU containing drawings, bill of materials, material specifications, manual artwork, rating plate, packaging warnings, test reports and revision history.

Pre-order EN 16647-1:2025 checklist

A. Product definition and architecture

✓	Checkpoint	What buyer should verify
☐	Scope	Manual decorative domestic-use fireplace; intended use and market claims reviewed.
☐	Fuel	Liquid alcohol fuel specification aligned with the standard and user manual.
☐	Output	Verified design target at or below 4.5 kW; no defined heating function.
☐	Burner volume	Individual burner volume at or below 3 L.
☐	Total capacity	Total fuel capacity at or below 10 L, subject to local limits.
☐	Containment	Secondary containment at least 110% of actual filling volume; excess fuel is inspectable/removable.
☐	Fuel-contact materials	Material specification checked against Clause 4.5 requirements.
☐	Refilling control	Fill-level indicator/mark and durable hot-refill warning included.
☐	Flame access	Tabletop housing restricts flame access from at least two sides.
☐	Glass	Where used: suitable glass type, at least 4 mm, safe edges, thermal/thermal-shock suitability.

STOP BEFORE TOOLING

If any item above is still undefined, the compliance-relevant product configuration is not yet frozen. Resolve these points before committing to final tooling or external testing.

Testing, documentation and production controls

✓	Checkpoint	What buyer should verify
☐	Stability	Tilt, impact, tipping and spillage test plan agreed for the final configuration.
☐	Draft	Draft-protection test plan agreed for full, half and low fuel levels.
☐	Combustion	CO/CO2 test plan defined on the complete fireplace.
☐	Room volume	Minimum room volume calculated from test results and included in packaging/manual.
☐	Shutdown	Manual extinguishing within 10 seconds verified.
☐	Relighting	Cold/warm ignition and re-ignition test conditions verified.
☐	Labels	Rating plate, safety information and durable warning symbols reviewed in destination-market language.
☐	Manual	Installation/use/maintenance/emergency instructions reviewed for destination market.
☐	FPC	Material, process, inspection, traceability and change-control records available.
☐	Change control	Any structural/material/burner/glass change triggers documented engineering review before mass production.

BEFORE THE PURCHASE ORDER

Ask the supplier to identify the tested model/revision and the production BOM that will be locked to it. The most important buyer question is not "Do you have a report?" but "Will mass production remain equivalent to the approved configuration?"

Build compliance into the product before testing

For private-label and OEM projects, the lowest-cost point to solve a compliance issue is during product definition. A late burner, glass or containment redesign can invalidate samples, delay testing and force packaging/manual rework.

A practical HND development sequence

1	Market & use definition Confirm destination market, indoor use, placement, target retail channel and product claims.
2	Structure review Review burner, containment, flame shielding, glass, materials, clearances and stability before tooling.
3	Prototype verification Build representative samples and complete engineering checks before external type testing.
4	Testing & documentation Coordinate the final configuration, manual, labels, warnings and test documentation.
5	Controlled production Lock the approved bill of materials and maintain traceability, inspection and change control.

DEVELOPING A NEW TABLETOP ETHANOL FIREPLACE FOR EUROPE?

Send HND your concept, target market, intended use, target price position and expected order quantity. Our team can review the product structure against the EN 16647-1:2025 design and testing framework before tooling and third-party testing.

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OEM / ODM • Private Label • Product Development • Bulk Export

Important notice

This guide is an independent practical summary prepared by HND Fireplace. It does not reproduce or replace the official EN 16647-1:2025 standard, laboratory testing, legal advice or destination-market regulatory review. Product requirements can depend on configuration, intended use and national rules. Obtain the official standard from an authorised national standards body and verify the current EU / national regulatory position before placing a product on the market.

Primary technical basis: EN 16647-1:2025, Alcohol powered flueless fireplaces - Safety requirements and test methods - Part 1: Manually operated decorative fireplaces for domestic use. Key buyer topics in this guide are paraphrased from Clauses 1, 3-9 and Annex ZA.