

DOME-008 / REV A

ETFE enclosure and habitat concept

STATUS: CONCEPT / UNQUALIFIED. Cost unknown. Patent review not performed. EU conformity not determined.

Source and requirements

Original extraction paragraph references: 3854, 9747

Source conflict: radius 600 m in one section versus diameter 600 m elsewhere. Resolve before any sizing or costing.

Candidate manufacturing route

Fab 3: connection nodes

Fab 4: structural members and cushion fabrication

Fab 5: assembly, pressure control and inspection

Governing models

P27, P28, E13, E29, E54, S09, S10 — see the English formula register; use only within each stated domain.

Critical missing evidence

Resolve radius/diameter and site geometry

Wind, snow, internal pressure, fire and evacuation design

Membrane creep, seams, anchorage and energy balance

Cost model and missing quotations

$C_{unit} = (\text{materials} + \text{machine/setup} + \text{energy} + \text{labour} + \text{QA} + \text{overhead}) / \text{accepted units}$. Record currency, price date, batch quantity, yield, rework, contingencies and uncertainty. Avoid double-counting costs included in machine rates. No supplier quotes have been obtained.

Envelope area and structural span

Foundations, cushion inflation and HVAC

Fire protection, access and maintenance

Patent-review record

Search seed (not executed): ETFE pneumatic cushion geodesic enclosure structural node inflation control

Required records: jurisdictions, search dates, CPC/IPC classifications, patent families, publication PDFs, independent claims chart, legal status and expiry/lapse review. Product geometry and intended use must be frozen sufficiently for a meaningful review.

Patent publication PDFs are not attached because no product-specific patent search or claims assessment has been performed. This dossier is not a patent, clearance opinion or claim of novelty.

EU and other regulatory applicability

Local building and structural codes

Construction-product, fire and occupancy requirements as applicable

Machinery/electrical rules for installed equipment

Starting sources: EUR-Lex Regulation (EU) 2023/1230 and Directive 2014/68/EU where relevant; EPO Espacenet and official registers for patent research. Full applicable standards, legal classification and jurisdiction-specific approvals must be verified.

Acceptance and reproducibility

Define the product measurands, test environment, tolerances, calibrated instrumentation, lot traceability and a statistically justified sampling plan. Numerical convergence, manufacturing yield and service reliability are separate criteria. No 99% feasibility or 98% product-equivalence claim is established.

Release gate

Do not treat a proposed route as a toolpath. Complete geometry, material allowables, process qualification, simulation verification, prototype tests, inspection, conformity review and responsible engineering approval before release.