Wellness Room Infrastructure Reference Card

Field Manual · Volume 18 · v1.0 · 2026 · O_2 · HBOT · Steam · Plunge · One-Page Clinical Summary

Restrepo Innovations · Franklin Lakes, NJ
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CODE IS THE FLOOR. STANDARD IS THE CEILING.

Scope: Oxygen enrichment rooms, hyperbaric oxygen chambers (HBOT), traditional Finnish and infrared sauna, cold plunge, steam shower, and float tank for luxury residential builds in NJ Climate Zone 4A. Governed by NFPA 99 Ch 14, NEC 422/680, IRC, ASHRAE 62.2, NJ UCC, and FDA 21 CFR 868.5470 — all modalities sequenced, sealed, and signed off before drywall closes.

§01 OPERATING PRINCIPLES

- Six-pillar wellness suite — O_2 enrichment, HBOT, sauna, cold plunge, steam, float — each a one-shot rough-in discipline.
- Residential-only posture — no clinical-grade or commercial mechanical systems; all product selections are FDA-cleared or UL-listed consumer/residential tier.
- Code-first — NFPA 99 Ch 14, NEC 422/680, IRC, ASHRAE 62.2, NJ UCC, and FDA 21 CFR 868.5470 are the floor, not the ceiling.
- NJ Climate Zone 4A — dedicated exhaust, vapor management, and corrosion-resistant finishes govern every modality.
- One-shot rough-in — every drain, circuit, conduit, and penetration set, photographed, and signed before any modality equipment arrives.
- Spare hardware ≥5% delivered + labeled — gaskets, filters, UV lamps, fuses, and control components included at closeout.

§02 OXYGEN ENRICHMENT & DELIVERY

- Primary concentrators: Hypoxico Sierra 100 / Everest Summit II (100–120 LPM, 550–650 W), CAT dual-mode O_2/N_2 systems, CAIRE NewLife Intensity 8 (8 LPM, 410 W) and Intensity 10 (10 LPM, 590 W, 20 psig outlet).
- Dedicated 20A circuit per concentrator — continuous-load rule (NEC 210-20) at 125%; GFCI where required by NEC Art. 210 for the installation location.
- NFPA 53 and NFPA 99 scope — oxygen-enriched atmospheres (OEA) above 23.5% O_2 are a fire-hazard multiplier; combustibles policy posted at room entry.
- ASHRAE 62.2 exhaust — dedicated supply and exhaust prevent CO_2 and humidity buildup; continuous flush is the industry standard; no recirculation to occupied areas.
- No off-gassing materials inside O_2 rooms — all finishes, adhesives, and furniture verified low-VOC before concentrator commissioning.
- O_2 monitor with controller interlock — alarm at 25% O_2 ambient triggers exhaust boost and disables ignition-capable devices on the same HVAC zone.

§03 HBOT CHAMBERS

- Specified chambers: OxyHealth Vitaeris 320 (34" dia.), Solace 210, and Respiro 270; Summit to Sea Grand Dive 40"; Newtowne C4-27 / C4-34 — all FDA 21 CFR 868.5470 Class II cleared.
- NFPA 99 Ch 14 Class A/B classification — residential soft-sided chambers fall under Category 3 mild HBOT provisions; combustibles policy posted and enforced.
- Floor loading — compressor + chamber loaded weight requires structural review; coordinate with engineer of record before placement on upper floors.
- EMI shielding — compressor motor RF emissions can interfere with AV and control wiring; maintain 3 ft minimum separation from data/control conduit runs.
- Vibration isolation — compressor on anti-vibration mounts or elastomeric pads; float slab or isolated pad preferred for basement installations.
- Dedicated circuit per chamber compressor — 120V/15–20A typical; no shared branch with ignition-capable appliances; AFCI only after manufacturer review.

§04 SAUNA — TRADITIONAL & INFRARED

- Traditional heaters: Harvia KIP 30 / 45 / 60 / 80 (3–8 kW), Tylo Combi series, Helo, Saunatec — 240V dedicated 30–60A per NEC 422.48 and UL 875.
- Infrared units: Sunlighten mPulse (Discover / Conquer / Believe), Clearlight Sanctuary series — 120V or 240V per model; True Wave Low-EMF/ELF heaters.
- Wood species — clear vertical-grain western red cedar, Nordic spruce, basswood, or eucalyptus; no treated lumber, no MDF, no off-gassing adhesives inside the hot room.
- Vapor barrier sequence — foil-faced barrier on hot side before tongue-and-groove; continuous seal at

§05 COLD PLUNGE — POWER & PLUMBING

- Specified units: Plunge All-In (120V, 15A, 110 gal), Renu Therapy Cold Stoic 2.0 (120V, 20A), Morozko Forge (240V, 20A), BlueCube C2 / CM (240V, 20–30A) — dedicated circuit per unit.
- GFCI protection per NEC 680 — receptacle or breaker GFCI within 5 ft of cold plunge water surface; verified and logged at commissioning.
- Floor loading — 350–700 gal capacity units impose 3,000–5,800 lb live load; engineer-of-record review required for above-grade installations.
- Waterproof membrane — Schluter Kerdi or Laticrete Hydro Ban under all tile surrounds; slope to drain 1/4" per foot minimum; P-trap and vent per IPC 2021.
- UV + ozone filtration standard — no halogenated chemical sanitation inside enclosed spaces; ozone generator with off-gas exhaust; filter cartridge schedule posted.
- Fill and drain valves — dedicated hose bib within 6 ft; floor drain sized for full-tank drain-down within 30 minutes; drain line heat-traced in unheated spaces.

§06 STEAM SHOWER — GENERATOR & VAPOR

- Specified generators: Mr. Steam (MS Series), ThermaSol PRO Series III, Amerec AK-K2, Steamist SM Series, Kohler Invigoration — generator sizing 1 kW per 30–50 cuft of shower volume.
- Dedicated 240V 30–60A circuit per generator — GFCI breaker required; wire gauge at 125% of continuous load per NEC 422; generator sited outside the steam enclosure.
- Full vapor seal — TCNA-compliant membrane ≤0.5 perm (ASTM E96); continuous seal at all corners, penetrations, and bench transitions before tile installation.
- Sloped ceiling — minimum 1" per foot pitch to prevent condensate drip on bathers; ceiling tile set in corrosion-resistant thinset; ½" tempered glass at all panels.
- Blow-down valve — generator drain cycle after each session; supply water hardness tested; RO + softener upstream of steam generator to prevent scale buildup.
- Corrosion-resistant ducting — PVC or stainless exhaust duct with backdraft damper; no galvanized in steam path; dedicated exhaust fan rated for 100% humidity continuous duty.

§07 FLOAT TANK — SALINE & ACOUSTIC

- Specified tanks: i-sopod, Dreampod V2 / Sport, Samadhi, Oasis, ProFloat — 800–1,200 lb Epsom salt per tank; live load 1,500–2,000 lb including water and salt.
- Salt-resistant plumbing — PVC Schedule 80 or CPVC throughout; no copper or galvanized in any saline-contact path; all fittings verified for 10% $MgSO_4$ saturation.
- Filtration sequence — UV + H_2O_2 or ozone + 1 µm cartridge filter per CDC/FTA recommendations; filter cartridge, UV lamp, and ozone cell replacement schedule posted at tank.
- Dedicated mini-split with corrosion coating — Mitsubishi Diamond Contractor series with factory or field-applied coil coating; no shared ductwork with living areas.
- STC ≥55 acoustic isolation — double-stud or staggered-stud wall with MLV and acoustic batt; RC channels on ceiling; floating floor assembly under tank; treated returns.
- Saline air exhaust — dedicated exhaust fan rated for salt-laden air; corrosion-resistant housing; exhaust directly to exterior; no recirculation to other occupied spaces.

§08 ELECTRICAL DISCIPLINE — GFCI / AFCI / CONDUIT

- NEC 210 GFCI in all wet zones — every receptacle within 6 ft of a water source GFCI-protected; circuit-breaker GFCI preferred in high-humidity wellness areas.
- NEC 680 spa and cold plunge — GFCI on all circuits within 5 ft of water; dedicated branch circuits; no shared neutrals on multi-wire circuits serving GFCI loads.
- Conduit discipline — EMT in dry zones; LFMC (liquid-tight flex) at equipment connections; no BX/MC in wet wellness walls without written direction.
- AFCI exemptions in wet rooms — NEC 210.12 AFCI requirement reviewed against AHJ interpretation; in HBOT/O_2 rooms, AFCI only after manufacturer written approval.

§10 HVAC ISOLATION — DEDICATED RETURNS & EXHAUST

- ASHRAE 62.2 baseline exhaust rates — minimum 20 CFM continuous exhaust per wet wellness room; O_2 rooms require 1 CFM per ft² of floor area minimum.
- No shared ductwork with bedrooms — dedicated supply and return for every wellness room; cross-contamination of humidity, steam, or O_2-enriched air to sleeping areas is not permitted.
- HBOT and O_2 humidity exhaust — dedicated exhaust fan with backdraft damper on dedicated circuit; exhaust directly to exterior; no attic or crawlspace termination.
- Sauna vapor relief — passive ventilation gap at floor level (1" min.) and adjustable vent near ceiling; no powered return inside hot room; sauna HVAC on dedicated zone.
- Steam shower corrosion-resistant ducting — PVC or stainless exhaust duct with continuous-duty exhaust fan; no galvanized in steam path; damper motorized for generator interlock.
- Float salt-air mini-split — Mitsubishi Diamond Contractor or equivalent with factory corrosion-coating on evaporator coil; separate condensate drain; no shared air handler with living zone.

§11 ACOUSTIC ISOLATION — WALL, FLOOR, CEILING

- STC ≥55 wall assembly — double-stud or staggered-stud framing, 3.5" acoustic batt, mass loaded vinyl (MLV 1 lb/ft²), two layers 5/8" type-X gypsum each side.
- IIC ≥55 floor assembly — floating floor on resilient mat or neoprene isolators over structural slab; no hard-tie connections through isolation layer.
- RC channels on ceiling — resilient channel at 16" o.c. decoupled from structure; two layers 5/8" gypsum; acoustic sealant at all perimeter joints and penetrations.
- MLV at penetrations — every conduit, pipe, and duct penetrating the acoustic envelope receives MLV wrap and acoustic putty pad; no open annular spaces.
- Vibration isolators on HBOT compressors — elastomeric anti-vibration mounts; compressor on isolated pad; flex connectors on all rigid supply and exhaust lines at compressor.
- Acoustic door seals — STC-rated door assemblies with continuous perimeter compression seal and automatic door bottom; treated HVAC returns with duct liner and sound baffles.

§12 WITHOUT WRITTEN DIRECTION

- BX/MC encapsulated in wet wellness walls — default to EMT or LFMC in all wet and high-humidity wellness spaces; BX/MC only with written direction from EOR.
- Copper in saline float path — default to PVC Sch 80 or CPVC throughout; copper substitution in any magnesium sulfate contact path requires written direction.
- Shared ductwork between bedrooms and wellness suite — dedicated supply, return, and exhaust for every wellness room; cross-system connection requires written direction from HVAC EOR.
- AFCI in HBOT/O_2 rooms without manufacturer review — obtain written confirmation from chamber and concentrator manufacturers before specifying AFCI on those circuits.
- Uncoated mini-split coil for float salt-air — factory or field-applied corrosion coating on evaporator coil is mandatory; uncoated coil installation requires written direction.
- Recessed cans directly above HBOT chamber — no recessed fixtures above or within 3 ft of HBOT chamber footprint without written direction and combustibles policy review.

§13 QC · AUDIT · CLOSEOUT

- Manufacturer commissioning sign-off — all six modalities commissioned by manufacturer rep or certified installer; sign-off sheets filed with closeout package.
- GFCI test record — every GFCI device tested with calibrated tester; trip current and reset documented; NEC 680 compliance verified at cold plunge and steam circuits.
- AHJ inspection records — rough-in and final inspection certificates for electrical, plumbing, and mechanical subcodes filed; NJ UCC certificate of occupancy in package.
- Water test for plunge and float — pH, alkalinity, hardness, and sanitizer levels tested at fill; filtration and ozone/UV system verified operational before owner handoff.

QC GATE — VERIFY BEFORE CLOSE-IN

- ☐ Manufacturer commissioning sign-off filed — all six modalities, signed by rep or certified installer
- ☐ NEC 680 GFCI verified — every cold plunge and steam circuit tested, trip current and reset documented
- ☐ NFPA 99 combustibles policy posted at HBOT chamber — signed acknowledgment in closeout file
- ☐ Sauna heater listed per UL 875 — field-measured, photographed, and logged
- ☐ Steam shower water test — TCNA membrane ≤0.5 perm confirmed before
- ☐ Cold plunge GFCI within 5 ft — circuit-breaker or receptacle GFCI confirmed and logged
- ☐ Float tank corrosion-coated coil — mini-split evaporator coating verified, factory or field-applied
- ☐ STC ≥55 applied at all wellness suite adjacencies — field sound test passed
- ☐ Spare parts ≥5% delivered + labeled — filters, UV lamps, gaskets, fuses, and control components included
- ☐ Closeout package complete — equipment tower SDS, install dates, warranty ca