🛠️ OVOMS Floating staircase Installation Guide

Doc Type: Site Manual | **Product:** Floating Staircase System

> ⚠️ ***SAFETY CRITICAL WARNING***
>
> - ***Resin Curing:*** *Ensure the structural resin has fully cured according to the manufacturer's specifications before applying any load.*
> - ***Torque Settings:*** *All M12 structural nuts* ***must*** *be tightened to* ***85–95 Nm****. Failure to do so may compromise the cantilever strength.*

🧰 1. REQUIRED TOOLS & EQUIPMENT

Power Tools

- **Hammer Drill:** Heavy-duty (SDS recommended) with Ø15 mm masonry drill bits.
- **Resin Applicator Gun:** High-quality dispenser compatible with the specific chemical anchor cartridges (Hilti/Fischer).
- **Industrial Vacuum & Blow-out Pump:** Essential for cleaning drilled holes to ensure resin bonding.

Hand Tools

- **Torque Wrench:** Calibrated to cover the **85–95 Nm** range.
- **Socket Set:** Deep socket (19mm) for standard M12 nuts.
- **Spirit Levels:**
  - Long level (1200mm) for tread alignment.
  - Short level (or laser) for checking glass verticality.
- **Allen Key Set:** For stainless steel glass stand-offs.

Personal Protective Equipment (PPE)

- **Safety Goggles:** Mandatory for drilling and resin work.
- **Cut-Resistant Gloves:** Vital for handling glass panels and metal edges.
- **Respiratory Mask:** Required when drilling concrete and using chemical anchors.
- **Safety Footwear:** Steel-toe boots for lifting heavy steel and oak components.

🪜 2. INSTALLATION PROCEDURE

Phase 1: Stringer & Wall Connection

The accuracy of this stage determines the level of the entire staircase.

1. **Position Stringer:** Align the steel stringer flush with the top and bottom finished floor levels. Verify vertical plumb and horizontal level.
2. **Drill Anchor Holes:** Drill **Ø15 mm holes** through the stringer mounting points into the structural wall.
3. **Clean Holes (Critical Step):**
   - **Blow** out dust with a pump.
   - **Brush** the hole interior.
   - **Vacuum** thoroughly. *Resin will not bond to dust.*
4. **Inject Resin:** Inject structural resin (Hilti HIT-HY 200 or equivalent) into the holes, filling from the back to prevent air pockets.
5. **Insert Studs:** Insert the M12 studs with a twisting motion. Allow to **fully cure** based on the resin manufacturer's timeline.
6. **Torque Stringer:** Once cured, install washers and nuts. Tighten to the required torque of **85–95 Nm**.

Phase 2: Oak Tread Installation

1. **Install Treads:** Position the oak step (with the pre-mounted connection plate) onto the stringer arm.
2. **Torque Treads:** Tighten the fixing nut to **85–95 Nm**.
3. **Repeat:** Repeat this process for all remaining treads, checking level on every step.

Phase 3: Glass Balustrade

1. **Align Glass:** Align the glass panels with the two **pre-installed insert nuts** located on the side of each oak tread.
2. **Fix Stand-offs:** Secure the glass using the stainless steel stand-offs.
   - *Note: Ensure the rubber/plastic gaskets are correctly inserted between the steel and the glass to prevent cracking.*
3. **Level Glass:** Check that all panels are plumb (vertical) before doing a final hand-tighten on the stand-offs.

Phase 4: Handrail & Finish

1. **Prepare Handrail:** Apply a continuous bead of **silicone adhesive** inside the groove of the oak handrail.
2. **Mount Handrail:** Fit the handrail groove over the top edge of the glass panels. Press firmly to ensure a tight seat.
3. **Clean Up:** Immediately wipe away any excess silicone. Remove protective films from glass and vacuum the site.

✅ 3. FINAL SIGN-OFF CHECKLIST

- [ ] Stringer wall bolts torqued to **85–95 Nm**.
- [ ] Tread connection bolts torqued to **85–95 Nm**.
- [ ] Glass panels represent a straight, vertical line.
- [ ] Handrail is securely bonded with no sharp edges.
- [ ] No movement or "bounce" in the treads when walked upon.