

Waterproof Design Checklist

Design review points for sealed membrane switches, graphic overlays and outdoor HMI panels.

Use this before requesting IP-rated, washdown, outdoor or cleaning-resistant interface parts.

Sealing target

Application/device

Target IP rating

Water exposure type

Cleaning method

Housing material

Test method or customer standard

Interface sealing details

- Target rating is defined: splash, wipe-down, washdown, rain, immersion or customer test.
- Overlay and back adhesive create a continuous seal around openings.
- Tail exit direction, bend area and cable routing do not break the seal.
- Connector location and mating connector sealing are reviewed.
- Housing surface flatness and texture support adhesive bonding.
- Screw holes, display windows, LEDs and cut-outs have separate sealing details.

Material and construction

- Overlay film and ink can tolerate water, cleaning chemical and UV exposure if applicable.
- Adhesive is matched to housing material, temperature and cleaning method.
- Spacer/circuit design avoids water paths into active switch areas.
- Vent, pressure equalization or trapped air issue is reviewed when needed.
- Edge distance from circuit trace to outer profile is sufficient.
- Samples are tested after bonding to the real housing, not only as loose parts.

Information to send to JASPER

- Target IP rating and test method.
- Housing drawing and surface material.
- Photos of mounting area, cable path and connector location.
- Cleaning chemicals, temperature range and outdoor exposure details.
- Required sample test quantity and acceptance criteria.
- Any historical failure photos from the current design.

Avoid these common failure points

- [] Open tail slots without strain relief or sealing plan.
- [] Adhesive frame too narrow around windows, screws or cut-outs.
- [] Rough, oily or powder-coated housing surface without adhesive test.
- [] Assuming a loose switch part is waterproof before final assembly.
- [] Changing connector, tail route or housing after sample approval without retesting.

Waterproof review result

Approved sealing method

Tests required before production

Material risk

Housing risk

Connector/tail risk

Action owner

Send drawings and requirements to JASPER engineering

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