

REGULATIONS

**CUSTOMER
SATISFACTION**

**QUALITY
MANAGEMENT
SYSTEM**

STANDARDS

AQUAEL

For Aquael, making a shower door is more than just assembling aluminum, glass and hardware. Our commitment is to provide our customers with shower doors that are easy to install, easy to maintain and exceed all expectations.



Furthermore, our Quality Management System, inspired by the highest standard of the automotive industry and based on more than 50 years of experience and expertise, ensure that every product we develop and manufacture for our customers are of the utmost quality.



Thanks to our Key Performance Index, we track the performance of our Quality Control at every stage of our production chain. Using the 8D methodology, we analyze and correct any performance issue and quickly develop effective solutions and prevention plans.



Our proven Quality Management System allows us to keep our defective rate as low as 0.03%.



THE PERSONS BEHIND AQUAEL'S RESULTS



Our R&D team works hard every day to think, design and bring new ideas and innovations to our customers. They are the ones making your projects a reality.



Our QC team continuously and meticulously monitors all inputs, steps, and outputs of Aquael's production to ensure we only deliver products that meet the highest quality standards in the industry.

TESTING LABS

Aquael has large, well organized, and fully equipped testing labs. Our R&D and QC teams have all the tools and machinery answering to the industry's highest standards at their disposition to test the new stocks of raw material, the new product ideas and prototypes, and our final products before shipment to our customers.

Our 50+ years of experience have allowed us to develop and optimize tests to fully meet, and in many cases exceed, numerous of our industry's norms and requirements – notably the CE or the ISTA standards. It has also served us to design and implement inhouse tests to further validate the quality, safety, solidity, durability and conformity of our shower doors.



OUR STEPS AND OUR TESTS

Product development stage

On-site supplier inspections and training

Installation – full assembly test

Product's durability – cycle test

Shower enclosure's resistance to shocks – stability test

Wheels – loading test

Pivot and hinge's stability – loading test

Water retention – high-pressure water test

Reliability of packaging – vibrating test

Reliability of packaging – drop test

Incoming inspections and raw material testing (IQC)

Extrusions and hardware finish – color comparison test

Anodization – sealing test

Brightness test for extrusions

Anodized thickness test

Powder coating – peeling test

Corrosion – neutral salt spray (NSS) test

Glass tempering – shattering test

Glass tempering – “lamp test”

Tempered glass resistance – impact test

Glass resistance – chemicals and stains test

Glass resistance – wet and dry cycling test

Easyclean nano-coating – hydrophobia test

Gasket – UV test

Gasket – magnetic force test

In production inspections (IPQC)

Outgoing quality control (OQC) – trial installations and final inspection

ON-SITE SUPPLIER INSPECTIONS AND TRAINING

Each of Aquael's suppliers is carefully chosen according to specific criteria and needs.

They undergo a strict evaluation of their organization's efficiency and quality capacity before their selection.

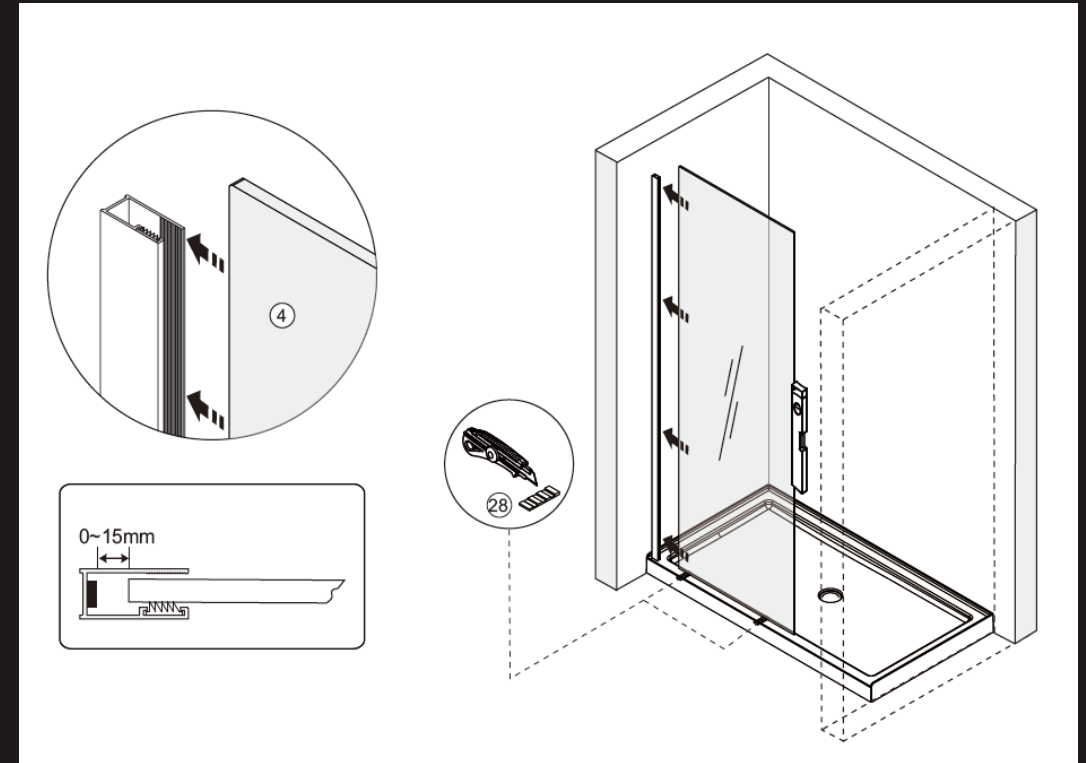
Furthermore, we frequently carry out on-site audit to verify, and to give recommendations to optimize, the quality of their products and the efficiency of their production process (ex. reduce waste and delays). If needed, we deliver formation and training to our supplier.



INSTALLATION – FULL ASSEMBLY TEST

Following the CE standard

We install a shower door from each model and each configuration to check the full assembly of a product and confirm the reliability of its structure and of its installation manual.



PRODUCT'S DURABILITY – CYCLE TEST

Following the CE standard

To make sure of the quality and durability of a product, we simulate its long-term use after installation. Our machine opens and closes the shower door 30,000 times at a speed of 10+/5 cycles per minute.



SHOWER ENCLOSURE'S RESISTANCE TO SHOCKS – STABILITY TEST

Following the CE standard

To test the resistance of a shower enclosure to big shocks, every panel, and every conjunction between a fixed and a moving panel, is hit with a load of 50Kg. The falling weight of impact body is determined by the distance to the opposite wall.



WHEELS – LOADING TEST

Established by Aquael

Before production, we test the quality, strength, and solidity of the wheels. They must support a load of 50Kg during 24h. No breakage or deformation is allowed.



PIVOT AND HINGE'S STABILITY – LOADING TEST

Established by Aquael

To verify the stability of our pivot and hinge doors, a 25Kg load is hung on the product for a 24h period. To qualify to this test, the shower door must bear the weight, and not drop.



WATER RETENTION – HIGH-PRESSURE WATER TEST

Following the CE standard

To confirm a shower door can prevent water leakage after complete installation, we spray high-pressure water (11 ± 1 L/M) at a distance of 300mm against the shower panels for 60 seconds.



RELIABILITY OF PACKAGING – VIBRATING TEST

Following the ISTA 1A standard

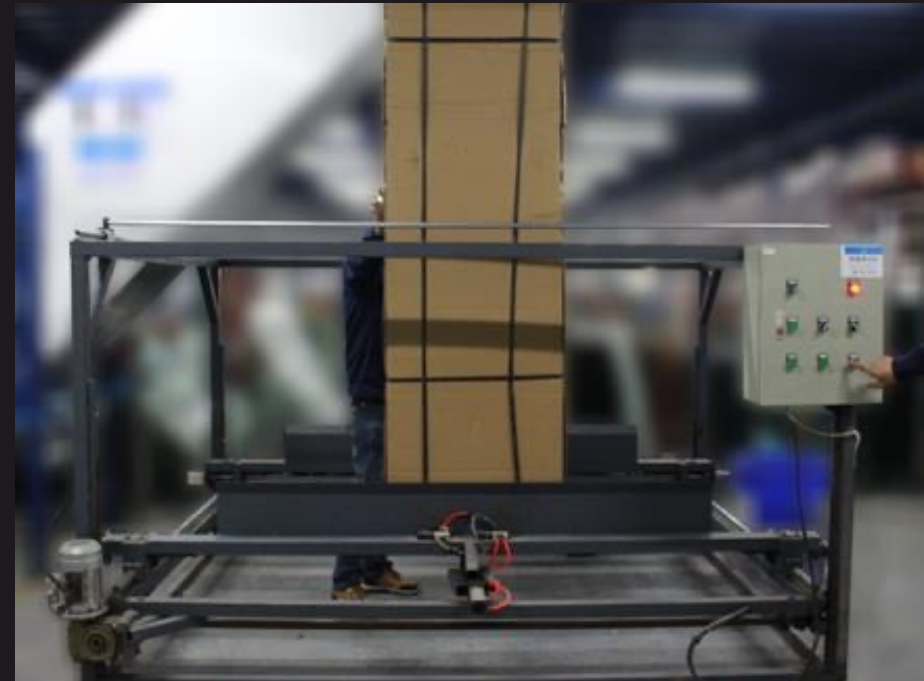
To validate the reliability of the packaging and make sure it will efficiently resist and protect the product until it is delivered to its destination, we simulate transport conditions. After using a machine to shake the box for a 90-minute period, we inspect it to see if there is any deformation or damage. The box is then directly submitted to the drop test.



RELIABILITY OF PACKAGING – DROP TEST

Following the ISTA 1B standard

Directly after the vibrating test, to validate that the packaging is reliable and will efficiently protect the product if the box is dropped during its transport, the box is lifted at a specific height – determined by our QC team in function of the weight of the product – and dropped on each of its sides. The box is then opened and the product is examined to make sure it is still intact.



INCOMING INSPECTIONS AND RAW MATERIAL TESTING (IQC)

Before production, Aquael thoroughly validates the quality of purchased raw materials, parts and components. First, they are submitted to a visual incoming inspection where they must meet our strict acceptance criteria. We then realize a series of tests to further verify and confirm their conformity to our standards.



(PROFILES) EXTRUSIONS AND HARDWARE FINISH – COLOR COMPARISON TEST / CONFIRMATION OF FINISHING

When receiving extrusions or hardware from a supplier for mass production, we compare one of Aquael's sample of the same color kind with a sample of the stock delivered. Both of the samples are thereby placed under the same light to ensure the finishing of the delivered material is within our tolerance range. The visual distinction, if any, must be minimal enough to meet our aesthetic criteria and those established with our clients.



(PROFILES) ANODIZATION – SEALING TEST

Following an Aluminum Industry standard

When receiving extrusions or hardware from a supplier, we use a high-quality permanent marker to draw a line on the material. To confirm the quality of its anodization, said line must be totally erasable when rubbed with 75% alcohol.



(PROFILES) BRIGHTNESS TEST FOR EXTRUSIONS

Following an Aluminum Industry standard

To confirm that extrusions answers to a satisfactory brightness standard, we use a brightness tester on 3 different sections of every extrusion randomly selected for inspection.



(PROFILES) ANODIZED THICKNESS TEST

Following an Aluminum Industry standard

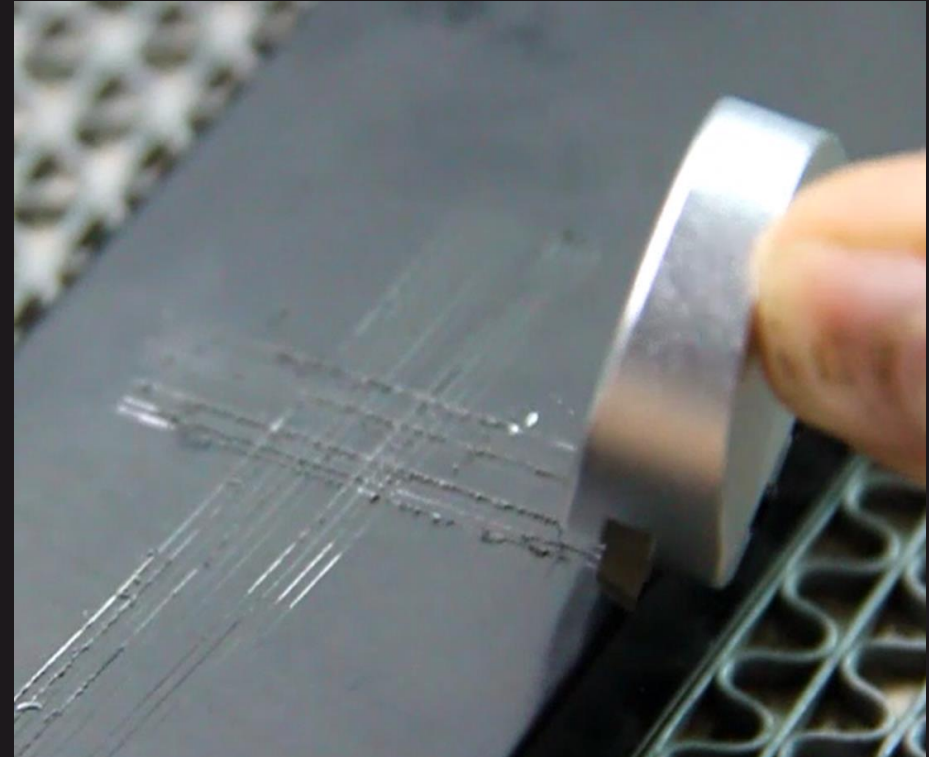
To confirm the anodized thickness of the aluminum, we use a thickness tester on 3 different spots for every inspected aluminum component. It must be a minimum of 2 μ m.



(PROFILES) POWDER COATING – PEELING TEST

Following BS3900 E6/ASTM D3359 standard

This test allows us to validate the quality of the powder coating and its adhesion to the surface of the aluminum and hardware. We use a peeling knife to carve a deep grid into the coating. We then repeatedly lay adhesive tape over the surface, making sure it adheres firmly, and pull it back vigorously. To qualify, no more than 4% of the coating must peel.



(PROFILES) CORROSION – NEUTRAL SALT SPRAY (NSS) TEST

Following the CE standard

This test allows us to confirm that all plated, anodized, and made of stainless-steel components can resist to corrosion over time. The components are placed into a salt spray test machine with water at a PH of 6.5-7.2 for 200 hours.



GLASS TEMPERING – SHATTERING TEST

Following the CE standard

To confirm the quality and the resistance – and thus, the safety – of the tempered glass, the glass is shattered and a minimum of 40 particles must be counted in a 50mm*50mm section of the material.



GLASS TEMPERING – “LAMP TEST”

Following the GB/T16422.3-1997 standard

Prior to production, to confirm the glass received is properly tempered, we encapsulate the edge of the material between a lamp and a piece of transparent plastic. For the glass to be qualified, a dark- and slightly red line must be visible.



TEMPERED GLASS RESISTANCE – IMPACT TEST

Following the CE standard

To test the resistance of the tempered glass prior to production, the material is hit with a load of 45Kg with the drop height between 1 219 mm – 1 232 mm.



GLASS RESISTANCE – CHEMICALS AND STAINS TEST

Following the CE standard

To test the resistance of the glass to cleaning products, 5 chemicals defined by the CE standard are poured on the material which must remain intact.



GLASS RESISTANCE – WET AND DRY CYCLING TEST

Following the CE standard

To confirm the resistance of the glass to humidity, variation of temperature, and high temperatures, we submit the material to 20 cycles of 24h where it is successively placed in a 50°C oven and 85°C bath. The glass surface must not be impacted.



EASYCLEAN NANO-COATING – HYDROPHOBIA TEST

To validate the glass is properly coated with our Easyclean formula, we spray water on the material and check the structure of the drops. If the drops are round, the glass is qualified.



GASKET – UV TEST

Following the GB/T16422.3-1997 standard

To verify the sustainability of the gasket's appearance through its useful life and make sure it won't tend to yellow with time, a sample of the stock is placed under UV stress and repeatedly sprayed with water during a 48h period. To qualify, the gasket must remain as it was before the test (no yellow color).



GASKET – MAGNETIC FORCE TEST

A magnetic tester is used to ensure the gaskets meet the magnetic characteristic requirements established by our R&D team.



IN PRODUCTION INSPECTIONS (IPQC)

Inspections take place during various stages of the production, especially at critical steps of the production process. These inspections allow us to react in a timely manner and fix quality issues before the product is complete, minimizing the waste of material, resources, and cost.

Throughout our production process, samples of components are randomly selected to be tested. They are inspected and compared with the specification requirements established for the specific product they are manufactured for.



OUTGOING QUALITY CONTROL (OQC) – TRIAL INSTALLATIONS AND FINAL INSPECTIONS

Our final inspection allows us to validate the quality and the exactitude of our customers' order and, in rare occasions, to catch and address a problem with the order before it gets to its buyer or, even worse, the consumer.

At this stage of the process, products are examined by our QC team, notably for specific performance and security requirements, overall appearance, and sizing. The salesperson in charge of the client's order will also systematically proceed to a meticulous verification before shipment.



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