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“
Quality is **never** an accident.
It is always the result of **intelligent effort.**”



“
La qualità **non è mai un caso.**
È sempre il risultato di uno **sforzo intelligente.**”

John Ruskin

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PRODUCTION OF CERAMIC TEST MACHINES



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FLUSHTEC MODULE

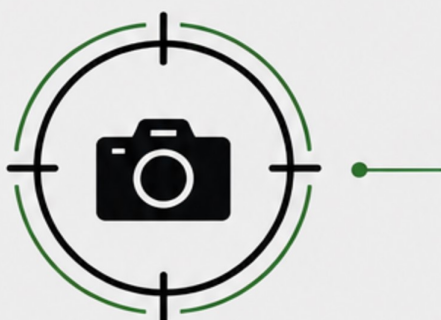
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ACCURATE FLUSH TESTING

— ACCORDING TO EN 997, AS 1172 —

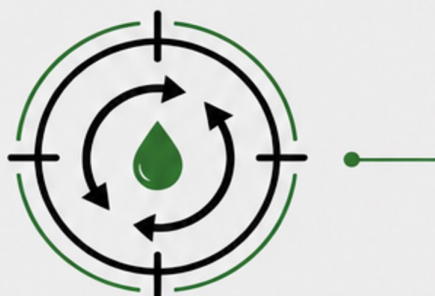
Performs flush tests in compliance with EN 997, AS 1172 and other international standards on request.



AUTOMATIC COUNTING

— HIGH PRECISION VISION SYSTEM —

An advanced camera with specific lens automatically counts balls, sawdust and oversplash (water splashes) according to EN 997 and AS 1172 standards.



WATER RECYCLED

— SAME WATER, EVERY TEST —

The water is recycled and always maintained clean for reliable and repeatable results.



LOADTEC MODULE

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ACCURATE LOAD TESTING

— ACCORDING TO STANDARDS —

Performs static load tests on wall hung wash basins, WC and bidet in compliance with international standards.



RECIPE TEST (VARIABLE LOAD)

— LOAD CHANGES OVER TIME —

Allows recipe tests with variable load profiles. The applied weight can be set to change over time according to the selected standard or custom recipe.



SAFE & FULLY ENCLOSED

— MAXIMUM OPERATOR SAFETY —

The machine is fully enclosed and cannot be opened during the test. It complies with all required safety standards.



UP TO
1000kg

UP TO
2500kg
MAX

PRECISE & CONTROLLED

— LOAD CELL TECHNOLOGY —

A high precision load cell measures the applied load in real time and controls it throughout the entire test.



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SHOCKTEC MODULE

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THERMAL SHOCK TESTING

— ACCORDING TO STANDARDS —

Performs thermal shock tests according to European EN Standards: water at 15°C and 70°C for up to 1000 cycles. France NF Standard provided.



TEMPERATURE MONITORING

— PRECISE & CONTINUOUS —

High precision temperature sensors monitor hot and cold water in real time to ensure accurate and repeatable thermal shock cycles.



WATER RECYCLING SYSTEM

— EFFICIENT & SUSTAINABLE —

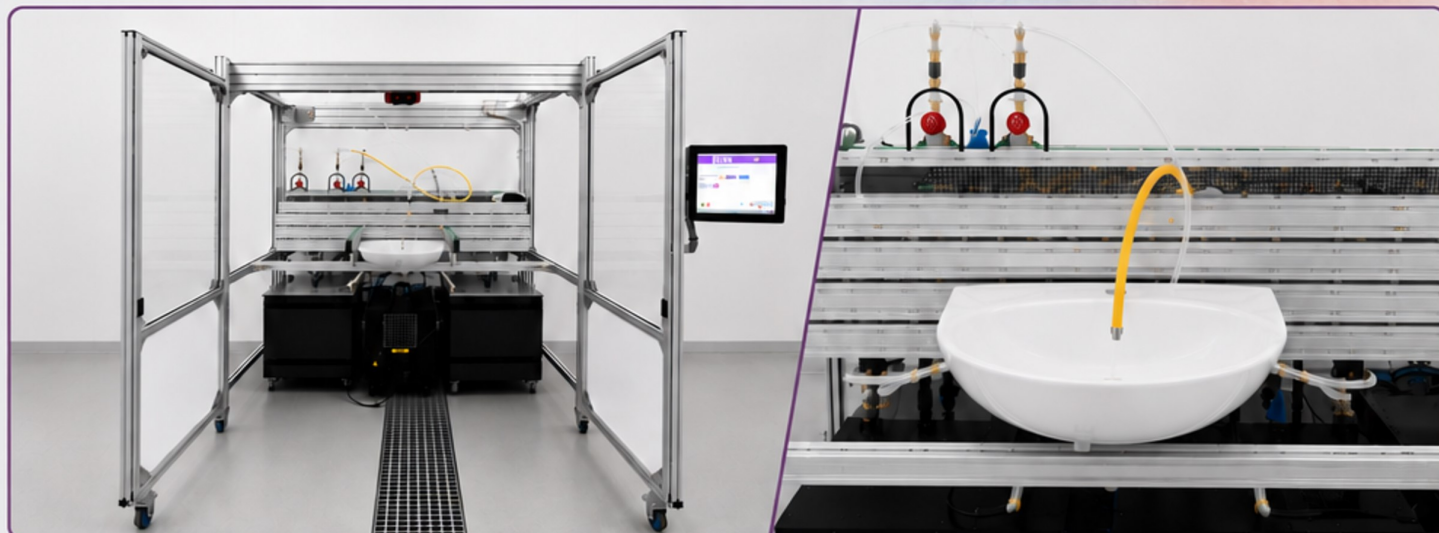
Separate tanks for hot and cold water allow recycling and reusing the same water, reducing consumption and environmental impact.



ADDITIONAL TESTS

— VERSATILE & COMPLETE —

With optional tools, it is possible to carry out thermal shock tests for shower trays and resin bathtubs. The module also performs overflow class determination tests for washbasins and bidets.



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SEATTEC MODULE

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ACCURATE LOAD TESTING

— ACCORDING TO STANDARDS —

Performs static load tests on toilet seat hinges and other critical points according to international standards with high precision and repeatability.



CYCLE & STATIC TESTS

— VERSATILE & ADVANCED —

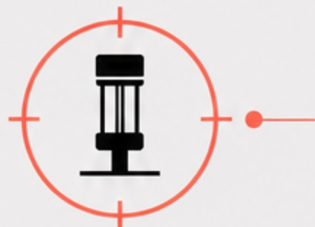
Performs cyclic tests on hinges (seat and cover) through thousands of lift-and-fall cycles and static load tests with controlled force application using high precision load cells.



SAFE & FULLY ENCLOSED

— OPERATOR SAFETY —

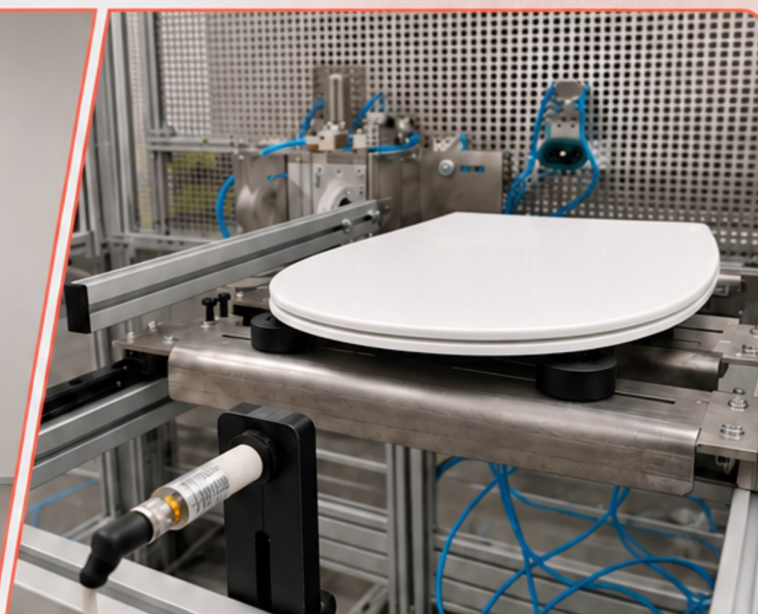
Fully enclosed structure with safety interlocks and protective doors to ensure maximum operator protection during all test phases.



PRECISE & CONTROLLED

— HIGH TECHNOLOGY —

Equipped with laser sensors, rotary lift piston, load application pistons and advanced software for accurate test control, data acquisition and detailed reporting.



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LEAKTEC MODULE

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HIGH PRECISION

— LEAK READING —

Advanced sensors and electronics ensure maximum accuracy in leak measurement.



WC LEAK DETECTION

— DOWN TO 60 MICRONS —

Detects even the smallest leaks down to 60 microns for maximum reliability and quality.



AUTOMATED TEST SYSTEM

— SMART • FAST • RELIABLE —

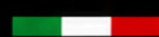
Fully automated process for efficient, repeatable and operator-independent testing.



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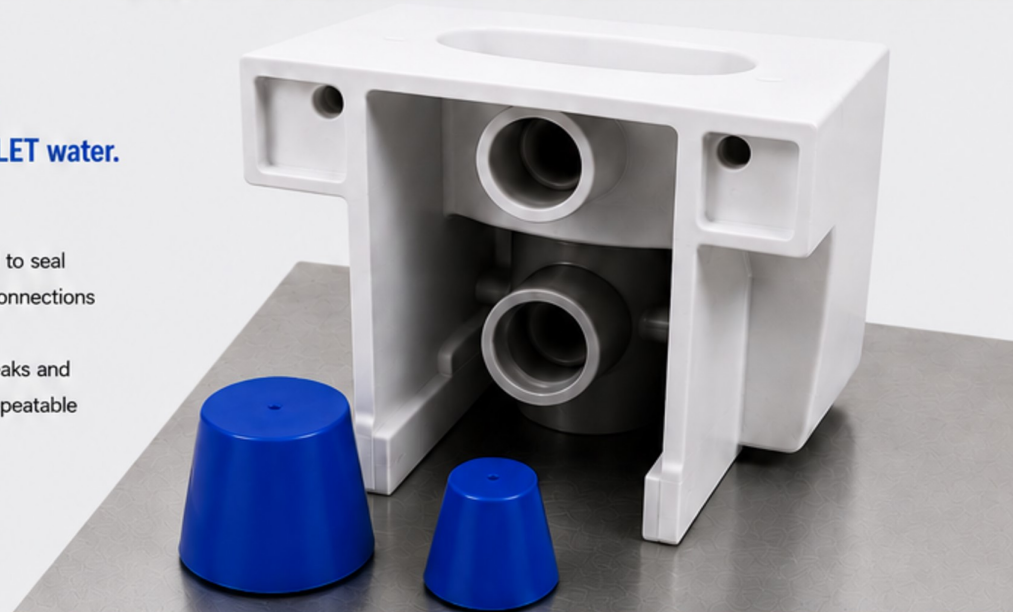
Bicomponent pad for LEAKtec module.

Bicomponent pad specifically designed for LEAKtec module. It ensures excellent sealing and stability during leakage tests, protecting the surface and improving test accuracy.



Silicon caps for INLET and OUTLET water.

Silicon caps designed to seal INLET and OUTLET connections during tests. They prevent water leaks and ensure reliable and repeatable measurements.



Tools for connection to the water supply.

Tools to connect the water supply to INLET and OUTLET during leakage tests.

The tool with hose is used to perform the siphonic section test.



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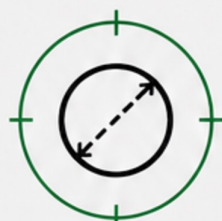
FLUSHING BALLS

Non-absorbent material balls specifically designed for flushing tests according to international standards. Ensuring reliability, repeatability and high performance.



ACCURATE WEIGHT

Each ball has a mass of (3.7 ± 0.1) grams for precise and consistent testing.



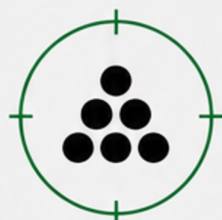
UNIFORM SIZE

Each ball has a diameter of (20 ± 0.1) mm to guarantee uniformity and compliance with the standard.



NON-ABSORBENT MATERIAL

Made of non-absorbent material to avoid variations in weight and ensure test reliability.



SET OF 50 BALLS

Supplied in sets of 50 pieces, ready to use for laboratory testing.



EN 997 (EUROPE)

50 balls of non-absorbent material, each having a mass of (3.7 ± 0.1) grams and a diameter of (20 ± 0.1) mm

MASS



3.7 ± 0.1 g

DIAMETER



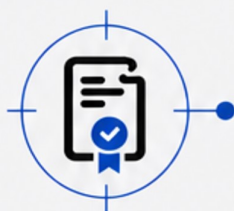
20 ± 0.1 mm

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FLUSHING SPECIMENS KIT



EN 997 (EUROPE) - AS 1172.1 (AUSTRALIA)

Four test pieces using 25 mm $\pm$ 2 mm diameter sausage casing, string, elastomer 'O' rings, nominal 10 x 2.5 mm, a metal impulse device, small quantity of water and cotton gauze finger bandage.



FLUSHING SOY BEAN SPECIMENS



Specimens used by independent performance evaluator in North America. 350 grams of total mass is used for each flush (7 specimens of approximate 50 grams)



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TOILET PAPER



EN 997 (EUROPE)
AS 1172.1 (AUSTRALIA)

Toilet tissue with a saturation time of (15 ± 1) seconds with approximate size of 140 mm x 100 mm and a mass of (30 ± 1) g/mm².



DRAIN LINE TRANSPORT



ASME A112 STANDARD (USA)
SASO 1473 STANDARD
(Saudi Arabia)

100 polypropylene balls with

- **weight:** 298 grams $\pm$ 10 g;
- **diameter:** 19 mm $\pm$ 0.4 mm;
- **density:** 833 kg/m³ $\pm$ 16 kg/m.



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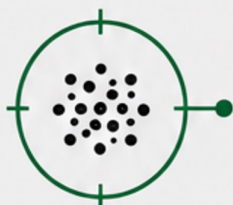
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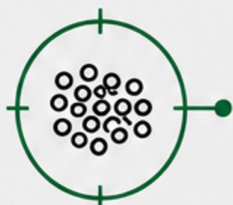
GRANULE AND BALLS TEST

Professional granule and balls test kit
designed for ASME A112 (USA)
and SASO 1473 (Saudi Arabia) standards.
Ensures consistent and reliable evaluation
of WC flush performance.



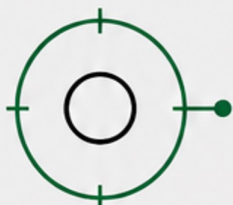
STANDARD COMPLIANT

Compliant with
ASME A112 Standard (USA)
and SASO 1473 Standard
(Saudi Arabia).



TEST MEDIA – GRANULES

2500 cylindrical high-density
polyethylene (HDPE) granules
with weight: 65 grams $\pm$ 1 g;
diameter: 4.2 mm $\pm$ 0.4 mm;
density: 951 kg/m³ $\pm$ 10 kg/m³.



TEST MEDIA – NYLON BALLS

100 nylon balls with
weight: 15.5 grams $\pm$ 0.5 g;
diameter: 6.35 mm $\pm$ 0.25 mm;
density: 1170 kg/m³ $\pm$ 20 kg/m³.



REPEATABLE RESULTS

Designed to ensure consistent
and repeatable granule and balls
testing for accurate flush
performance evaluation.



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BASKET METHOD



EN 997 (EUROPE)

Apparatus according to the EN Standard useful to check commercial toilet paper to compliant the saturation time for EN 997.

It is used to measure the absorbency of toilet paper, evaluating the water absorption time using a timer, in order to verify compliance with the EN 997 standard.



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PAPER DISCHARGE TEST

Professional paper discharge test accessory designed for AS 1172.1 (Australia).

Ensures repeatable, reliable and standardized testing of WC full-flush performance.



STANDARD COMPLIANT

Designed specifically for the Paper Discharge Test described in Appendix A of AS 1172.1.



STANDARDIZED PAPER

Uses **40 g/m²** paper with a size of **140 ±5 mm × 115 ±5 mm**, as required by the Standard.



REPEATABLE TESTING

The crumpling device produces **six identical** paper pieces, ensuring repeatability and reliable comparison between test cycles.



FULL FLUSH VERIFICATION

Developed to evaluate the effective discharge performance during the full-flush operation in accordance with AS 1172.1 Appendix A.



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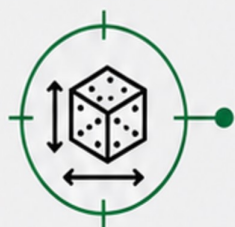
MIXED MEDIA TEST

Professional mixed media test kit
designed for ASME A112 (USA)
and SASO 1473 (Saudi Arabia) standards.
Ensures consistent and reliable evaluation
of WC flush performance.



STANDARD COMPLIANT

Compliant with
ASME A112 Standard (USA)
and SASO 1473 Standard
(Saudi Arabia).



TEST MEDIA – SPONGES

White synthetic open-cell
polyurethane sponges
measuring 20 mm x 20 mm
 ± 1 mm x 28 mm ± 3 mm
and with a density of
 $17.5 \text{ kg/m}^3 \pm 1.7 \text{ kg/m}^3$.



TEST MEDIA – KRAFT PAPER

15 lb Kraft anti-tarnish paper
measuring 190 mm ± 6 mm
x 150 mm ± 6 mm.



REPEATABLE RESULTS

Designed to ensure consistent
and repeatable mixed media
testing for accurate flush
performance evaluation.



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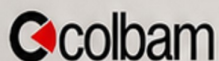
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AMONG OUR CUSTOMERS

Thank you for your trust and partnership.



المختبر التكميبي التجارب والدراسات
LABORATOIRE PUBLIC D'ESSAIS ET D'ETUDES





20 YEARS OF KNOWHOW

TESTING MACHINES FOR EVERY STANDARDS

COOPERATION WITH THE BIGGEST CERAMIC COMPANIES
ALL OVER THE WORLD

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DISCOVER ALL TESTS





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