

R O B

S.A.I.T.



ADVANCED
SOLUTIONS
TECHNICAL
SYSTEMS



All tests are guided by a computer equipped with a TouchScreen and voices interfaces. After each test is automatically written a report with the results of the test just performed.

1) CLASS 1 – WASH OF BOWL UNI 997 (PAR. 5.2.2)

- Load the cistern with predefined amount of water.
- Spraying water inside the bowl surface.
- Distribution of sawdust inside the bowl.
- Cistern Discharge.
- Positioning of RotoCam sensor inside the bowl.
- Automatic evaluation of bowl surface not washed.
Those steps must be done 5 times.

2) CLASS 1 – FLUSHING OF TOILET PAPER UNI 997 (PAR. 5.2.3)

- Load the cistern with predefined amount of water.
- Curling and putting inside the bowl of 12 sheets of toilet paper.
A beep sound guide these operations.
- Cistern Discharge.
Those steps must be done 5 times.

3) CLASS 1 – FLUSHING OF 50 SMALL PLASTIC BALLS UNI 997 (PAR. 5.2.4)

- Load the cistern with predefined amount of water.
- Put the 50 small plastic balls inside the bowl.
- Cistern Discharge.
- Collecting the balls that coming out in a basket and positioning into the counting station.
- Check count and record the single test.
Those steps must be done 5 times.

4) CLASS 1 – OVER-SPLASHING UNI 997 (PAR. 5.2.5)

- Load the cistern with predefined amount of water.
- Positioning of the photosensitive paper outside the sanitaryware.
- Cistern Discharge.
- After a predefined time (few seconds) take the paper and positioning it under the photocamera.
A picture will be taken and attached to the final report.

5) CLASS 1 – AFTER FLUSH VOLUME UNI 997 (PAR. 5.2.6)

- Load the cistern with predefined amount of water.
- Positioning the 4 specimens inside the bowl.
- Cistern Discharge.
- With a toroid metal sensor, each specimens will be noted.
- A weighed tank measure the water quantity that comes out after the last specimens.
- Each single test will be recorded into a final report.
Those steps must be done 10 times.

6) CLASS 2 – SOLID DISCHARGE AND AFTER - FLUSH VOLUME FOR THE MAXIMUM FLUSH UNI 997 (PAR. 6.9)

- Load the cistern with predefined amount of water.
- Positioning the 4 specimens inside the bowl.
- Cistern Discharge.
- With a toroid metal sensor, each specimens will be noted.
- A weighed tank measure the water quantity that comes out after the last specimens.
- Each single test will be recorded into a final report.
Those steps must be done 10 times.

7) CLASS 2 – PAPER DISCHARGE FOR THE REDUCED - FLUSH VOLUME UNI 997 (PAR. 6.10)

- Load the cistern with predefined amount of water.
- Curling and putting inside the bowl of 6 sheets of toilet paper.
A beep sound guide these operations.
- Cistern Discharge.
Those steps must be done 5 times.

8) CLASS 2 – LIQUID CONTAMINANT DYE RETENTION UNI 997 (PAR. 6.11)

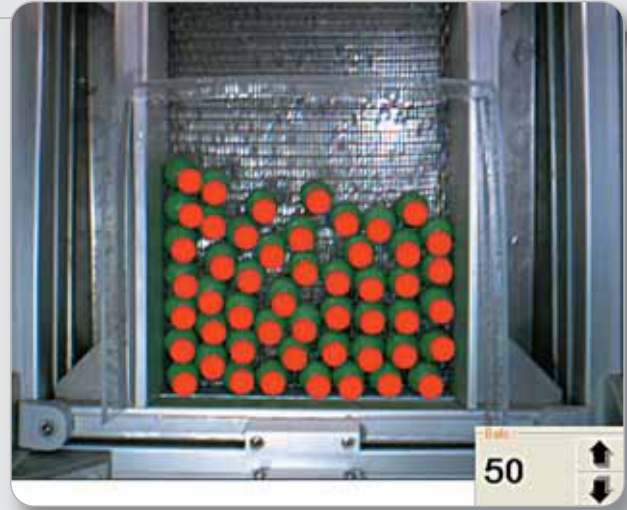
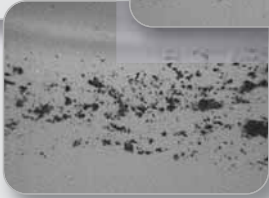
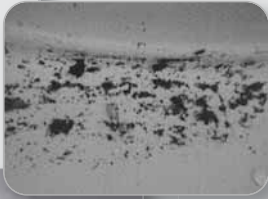
- Load the cistern with predefined amount of water.
- Removing of all the water inside the bowl with the intake water pipe.
- Filling of the siphon with contaminant dye (5 g/l potassium permanganate (KMnO₄);
- Cistern Discharge.
- Take some liquid from the siphon into a test tube.
- Positioning of test tube inside a color analyzer and record the result of the single test.
Those steps must be done 5 times.

9) CLASS 2 – WASH OF BOWL UNI 997 (PAR. 6.12)

- Load the cistern with predefined amount of water.
- Spraying water inside the bowl surface.
- Distribution of sawdust inside the bowl.
- Cistern Discharge.
- Positioning of RotoCam sensor inside the bowl.
- Automatic evaluation of bowl surface not washed.
Those steps must be done 5 times.

Designing our test machine we put a lot of attention to environmental protection, realizing the plumbing, so you can always use the same water for all tests. A system of pumping and filtering shall recover the water collected in the tank bottom and making it available for filling the cistern and for all other functions. If it becomes necessary to replace the water, a rapid series of attacks possible to isolate the bottom tank of easily collected and transported through its own wheels to the point of discharge. The next filling can be done either automatically with the appropriate water floating system, either manually from a normal tap.

Image, taken with high precision camera, of plastic balls used in UNI 997 (5.2.4).



Rotative Camera (RotoCam), summarize the residual sawdust inside the bowl basin.



Adjustable arm with pneumatic actuator used to discharge the close coupled WC



Concentration analyser of the colouring agent contained in the sanitary ware siphon water.

ADVANCED SOLUTIONS

The RGB Module is composed by:

- Support aluminium bench for the fixing of the bowl with a sliding trolley to make easy assembling.
- Cistern box Geberit Twico with discharge button.
- Motorized adjustable up-down cistern support.
- Additional mechanical arm with discharge pneumatic actuator for the close coupled wc.
- Stainless steel tank to collect the water resulting from the discharge operations.
- Aluminium basket for the collection of the balls.
- High precision counting system for the balls, with camera.
- Centrifugal electropump group with electronic control system for the recharging of the boxes using the same water.
- Water pressure reducers.
- High precision water meter (60 pulse/litre).
- Survey system for the residual water (according to EN997), mounted on a series of 4 precision flexion load cells.
- Switchboard with a PC and a touchscreen monitor for the testing and the creation of cycles with the repetitiveness required by the regulations.
- Rotocam®
- Color analyzer
- Top camera for oversplashing
- Separated tank for contaminant dye

Support bench

The support bench is carried-out in aluminium section bars with adjustable mounting screws, to level the sink contrac system. Back there is a Geberit Twico sink box with discharge button. The bowl is positioned on a tray with sliding wheels, by the adjustable aluminium brackets, that allow an easy insertion of the adduction and discharge pipes. Because of the shaping of the clamping system, it is possible to mount hanging bowls, floor bowls, wall bowls and built-in units with joined boxes.

RGB Module between BLACK and LIGHT BLUE modules, joined together to share some TouchScreen interface.



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Switchboard with touch - screen monitor

The swithboard is the heart of the above machinery. It is provided with a PC and a touchscreen monitor for the test and creation of the cycles with the ùrepetitiveness required by the regulations.

A recording and printing system is supplied, to produce a written report (in which the jpg client's logo will be inserted) to attach to each separate piece. The printer is included.

The board has a keylock switch. The machine is branded EC and is supplied with the instruction and maintenance book.





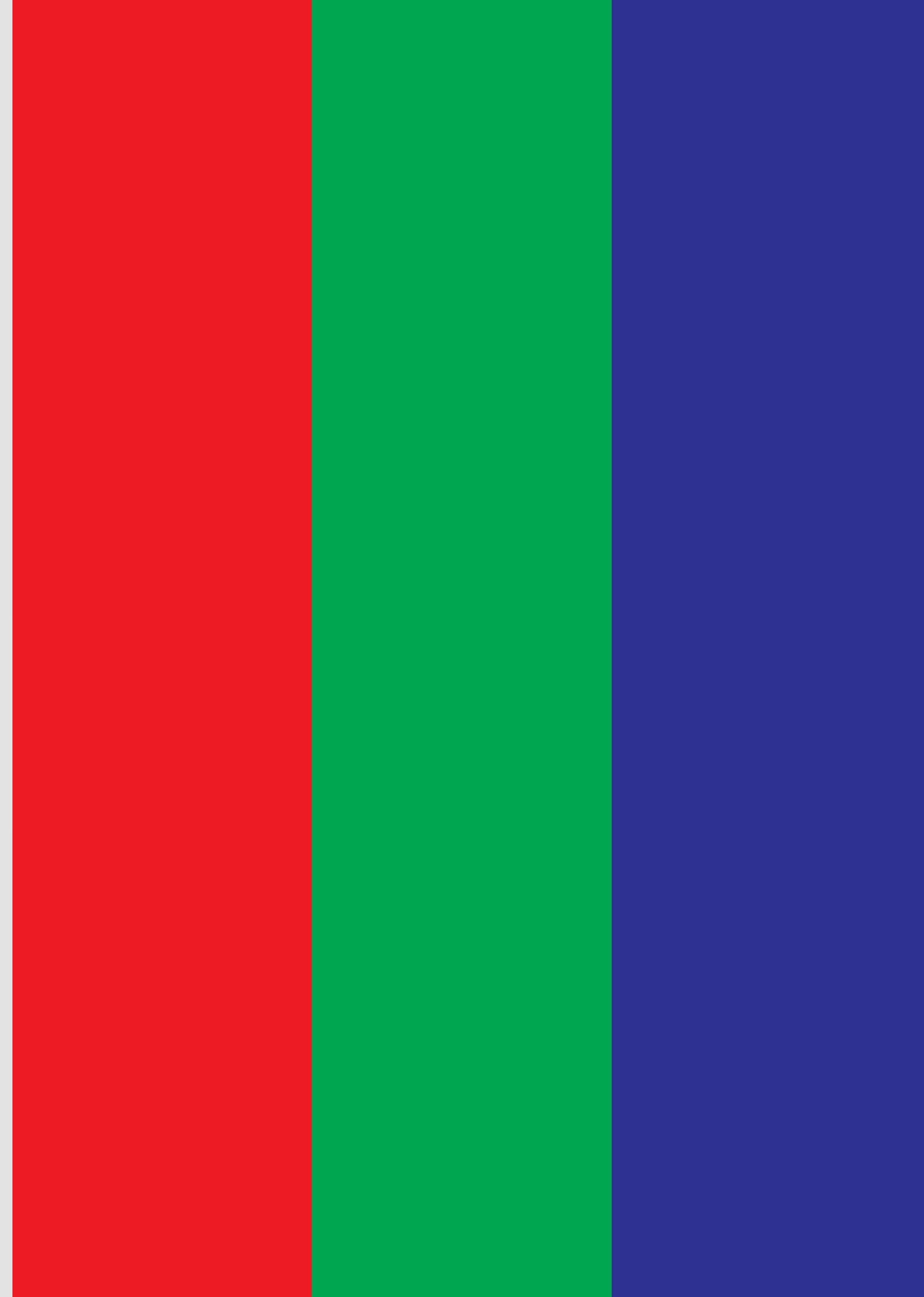
The long experience in the implementation of modular machines for functional tests of sanitary ceramics, the relationship of interchange with our customers around the world and, not least the commitment that we use in our research and development work we were led to the creation of a new compact test module named:

RGB Module

This new module was designed in order to achieve a single machine with many of the tests required by the regulations. The fact of having a compact size module allows you to save on space used as a test room and is easier to transport and shipping at the end customer.

With RGB module, you can run these tests:

STANDARD	TEST	DESCRIPTION
UNI 997	5.2.2	Class 1 Wash of bowl
UNI 997	5.2.3	Class 1 Flushing of toilet paper
UNI 997	5.2.4	Class 1 Flushing of 50 plastic balls
UNI 997	5.2.5	Class 1 Over Splashing
UNI 997	5.2.6	Class 1 After flush Volume
UNI 997	6.9	Class 2 Solid discharge and after flush volume for maximum flush
UNI 997	6.10	Class 2 Paper discharge for reduced-flush volume
UNI 997	6.11	Class 2 Liquid contaminant dye retention
UNI 997	6.12	Class 2 Wash of bowl





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