MATE
ADVANCED LABORATORY

MATE SRL - Laboratory Test

SUMMARY

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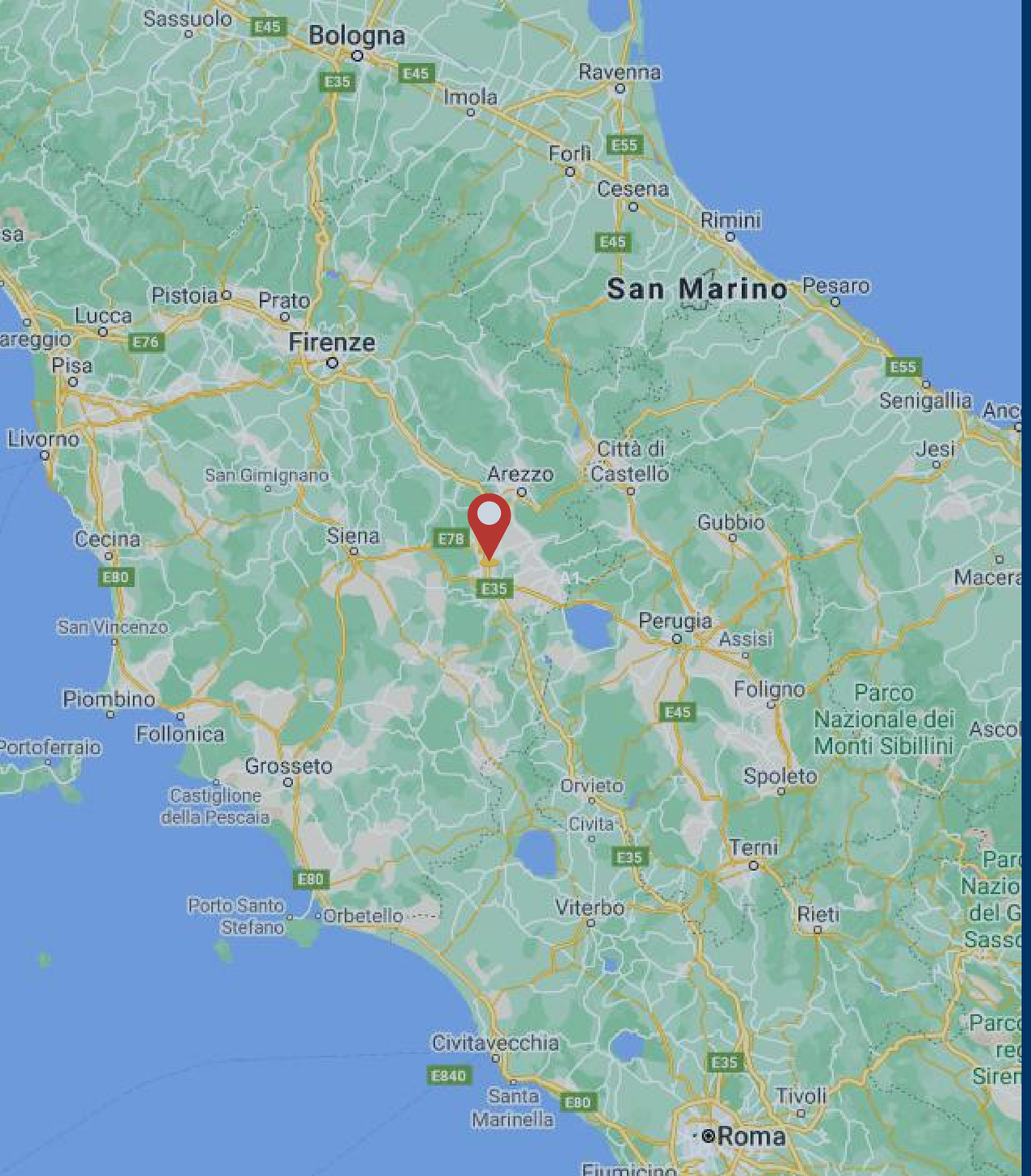

WHO WE ARE

MATE is a testing Laboratory that offers companies customized activities for the certification and qualification of their products in the **Automotive, Motorsport, Aerospace, Defense, Railway , Biomedical, Naval** and **E-mobility** sectors.

Is situated a few kilometers from the **A1 Valdichiana motorway exit**, is easily accessible from all over Italy.

The Laboratory is part of the group **ART - Advanced Research Technology**

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ACCREDITATIONS

The Mate test laboratory is accredited by **Accredia with N.1773L** in compliance with the requirements of the **ISO17025:2017** standard, **for climatic tests and for vibration and shock tests, in the automotive, industrial and aeronautical fields.**

ACCREDIA DATABASE:

CLICK HERE

VIEW THE LIST OF ACCREDITED TESTS:

CLICK HERE

MATE IS THE FIRST LABORATORY IN ITALY ACCREDITED FOR TESTS IN THE AERONAUTICAL FIELD IN ACCORDANCE WITH THE RTCA DO 160G REGULATION.

STAFF CERTIFICATIONS

UNI EN ISO 9712:2012

Qualificazione e certificazione del personale addetto alle prove non distruttive

We guarantee reliable visual inspections thanks to repeatable and reproducible methods and to our highly qualified and certified 2nd level staff - **VISUAL METHOD - in accordance with the UNI EN ISO 9712:2012 standard.**

ISO
UNI EN ISO 9712:2012
VISUAL TESTING (VT)
LEVEL 2 CERTIFIED

CLICK HERE

IPC A-610

Acceptability of Electronic Assemblies

The CIS certification - **Certified IPC Specialist** - is the attestation issued following a theoretical course which, as its main objective, has to provide the tools to evaluate the acceptability/non-acceptability of electronic assemblies, to train and therefore certify personnel able to properly apply the stability standards from the IPC.

CLICK HERE

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OUR TESTS

Laboratory tests are a fundamental step for all those companies that want to place a product on the market.

Checking their resistance, duration and safety allows you to avoid problems in advance by avoiding the withdrawal from the market of your products while also safeguarding the company's image.

The MATE Laboratory is able to support its customers in all phases of the test, from experimental investigations in the field or in the laboratory up to the design and implementation of dedicated test campaigns.

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ENVIRONMENTAL TESTS

CLIMATIC TEST

- **TEMPERAURE AND HUMIDITY TESTS,** that certifies the reliability of a product in the extremes of temperature and humidity to which it can be subjected;
- **TESTS IN THERMAL SHOCK ABSORBERS**, where the product is exposed to extreme temperatures, high or low, with transition times of a few seconds between one and the other.

ALTITUDE TEST

- Use **LOW PRESSURE** (altitude) **TESTS**, to determine if materiel can withstand and/or operate in a low pressure environment and/or withstand rapid pressure changes.

SOLAR RADIATION TEST

- The **SOLAR RADIATION TEST** allows a product to be subjected to simulated solar radiation to observe its behavior and performance also in combination with the change in temperature and humidity conditions.

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VIBRATION TESTS

SHOCK AND VIBRATION TESTS

- We reproduce all the vibration profiles: sine, random, sine on sine, sine on random, random on random and test profiles acquired in the field with accelerations up to 100g. We can also produce semi-sinusoidal sawtooth and trapezoidal shocks with amplitudes up to 350g.

ACCELERATION TEST

- Having a centrifuge that can reach maximum accelerations of up to 40g on specimens weighing up to 50kg, we assist customers in carrying out product certification tests including sustained crash safety and acceleration tests.

COMBINED TESTS

- The Laboratory is equipped with a climatic chamber integrated into the vibrating bench to perform vibration/thermal shock tests with the aim of verifying the influence of climatic and dynamic conditions on equipment or components in terms of electrical, mechanical or other types of variations.

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CORROSION TESTS

SALT FOG TEST

- The **CORROSION TESTS WITH SALINE FOG IN CHAMBER,** are recognized worldwide, **ISO9227, ASTM B117**, among the most effective in simulating the real life span of a material, or of a particular treatment and its resistance to deterioration in environments. aggressive.

TEST IN CYCLIC SALT FOG

- The classic standard test in salt spray (continuous test with a saturated environment in accordance with ISO 9227), has been joined by cyclic tests or cyclic tests which reproduce the accelerated corrosion process closest to natural ageing.

CORROSION PAINT SYSTEM ASSESMENT

- We make tests and analyzes with the aim of evaluating the behavior of different types of coatings and protective coatings when subjected to certain environmental conditions in terms of corrosion, humidity and pollutants.

CONDENSATION TEST

- Salt Spray is often performed in combination with moisture / condensation tests. This test combination can provide valuable information in terms of corrosion over the life of the product in the field.

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IP TESTS(*Ingress protection*)

IP TESTS are used to evaluate the degree of protection provided by mechanical enclosures and electrical panels against the penetration of solid foreign bodies such as dust (Dust test) and water (water protection test).

The international classification system for the effectiveness of the hermetic seal against the ingress of foreign bodies into the equipment uses the letters IP “Ingress Protection” followed by two digits:

- The first digit indicates the level of protection that the enclosure provides against the access of dangerous parts (for example electrical conductors or moving parts) and the entry of solid foreign objects;
- the second digit indicates protection against the ingress of liquids.

The Mate Laboratory has a large space to carry out tests of resistance to dust and water, for the determination of the IP degree against the penetration of foreign bodies in compliance with the regulations:

IEC 60529:1989/AMD2:2013/COR1:2019 ISO 20653:2013.

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ENDURANCE TESTS

FATIGUE TEST

- **FATIGUE TEST ON UNIFIED SPECIMENS**: determine the duration of the material when subjected to the set work cycles;
- **FATIGUE TEST ON SAMPLES**: the component is subjected to accelerated load cycles that simulate the number of cycles to which the component will be subjected during its life in a short time.

HYDRAULIC TEST

- We make resistance tests with cycle times up to **200 Hz** to determine, for example, the life of a heat exchanger, a pipeline, a tank under specific conditions of pressure-temperature-frequency..

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BATTERY TESTS UN38.3

To be transported safely (by air, sea, rail or road), batteries must not rupture, disassemble, leak or catch fire and are therefore subjected to a rigorous series of tests performed by an independent test laboratory.

The MATE Laboratory carries out tests on lithium batteries (small and large batteries) in accordance with **UN 38.3 and IEC62281** and in particular:

- **Test T.1**: Altitude simulation
- **Test T.2**: Thermal test
- **Test T.3**: Vibration
- **Test T.4**: Shock
- **Test T.5:** External short circuit
- **Test T.7**: Overcharge

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TRANSPORT TESTS

The Mate Laboratory is able to perform tests representative of all transport conditions, cold environments, hot dry environments, humid environments, marine environments, desert environments with heavy industrial pollution, as well as transport on paved and off-road roads, road, rail, on ships and planes through vibration, free fall and high altitude tests in accordance with the main standards such as:

- **IEC 60721-3-2** – Classification of environmental conditions – Part 3-2: Classification of groups of environmental parameters and their severities – Transportation and Handling;
- **MIL STD 810H** – Method 514.8;
- **ASTM D 7386** – Performance Testing of packages for Single Parcel Delivery Systems;
- **ASTM D 4728** – Random Vibration Testing of Shipping Containers;
- **ASTM D 6344** – Concentrated Impacts to Transport Packages;
- **ASTM D 5276** – Drop Test of loaded Containers by Free Fall;
- **ASTM D 4169** – Performance Testing of Shipping Containers and Systems.

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IK TESTS *(Impact test)*

The MATE Laboratory performs IK tests to determine the degree of protection against shocks in electrical equipment such as cameras and other devices.

The IK classification allows you to specify the degree of protection that is guaranteed by the device case against external mechanical impacts.

IK codes provide a means of specifying the ability of an enclosure to protect its contents from external impact in accordance with **IEC 60068-2-75:1997.**

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MECHANICAL TESTS

TENSION, COMPRESSION AND FLEXION TESTS

The Mate test laboratory is able to perform:

- **TENSILE STRENGTH TESTS** to measure the breaking strength of materials subjected to an elongation process. With this test it is possible to determine the resistance, elasticity and deformability typical of a material;
- **COMPRESSION STRENGTH TESTS** to measure the resistance-deformation values of a material subjected to different crushing loads;
- **BENDING STRENGTH TESTS** to measure the breaking load or deformation of a component subjected to bending.

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MEASURES

There are cases in which experimentation represents the only reliable investigative tool to evaluate particular technical aspects.

The Mate test laboratory is able to:

- Create traditional or innovative measurement chains, commercial or ad hoc designed according to customer needs.

SECTORS

To access global markets, manufacturers must demonstrate that they have subjected their products to a rigorous series of tests.

The aim is to create products that are resistant and safe to a series of variables which can be mechanical, such as vibrations and/or acceleration, or environmental, such as the exposure of a material to high temperatures for several hours.

At Mate we support customers in all phases of the test, from experimental investigations in the field or in the laboratory to the design and implementation of dedicated test campaigns.

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SECTORS

AUTOMOTIVE

The Mate Laboratory designs and tests components for the automotive sector according to **ISO16750 automotive standards.**

AERONAUTICS & DIFENCE

The Mate Laboratory designs and tests components for the aeronautical and defense / military sectors in accordance with the main **RTCA DO 160G - MIL 810 regulations**.

AEROSPACE

The Mate Laboratory designs and tests components for the aerospace sector according to the **ECSS-E-ST-10-03C standard.**

AGRICULTURAL

The Mate Laboratory designs and tests agricultural and operating mechanical components in compliance **with BS 7691 standards; CLAAS - CN 05 0215-1; CNH; ISO 15003.**

BIOMEDICAL

The Mate Laboratory designs and tests components for the biomedical sector in accordance with the standard family of the **EN / IEC 60601 series.**

E-MOBILITY

The Mate Laboratory designs and tests components for the e-mobility sector in compliance with **IEC 62281 standards; IEC 62660; ISO 6469-1.**

RAILWAY

The Mate Laboratory designs and tests components for the railway sector, in compliance with the **IEC 61373** standard and type and acceptance tests according to **RFI specifications such as IS402**

NAVAL

The Mate Laboratory designs and tests components for the naval sector in compliance with **IEC 60945 standards; Lloyd's; DNV - DNVGL-CP-0185; DNV - STANDARD 2.4.**

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CONTACTS

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@Follow Us

The company has its headquarters in Passignano Sul Trasimeno (PG), in the splendid setting of Villa del Pischiello where our parent company ART is located.

The Laboratory is part of the ART – **Advanced Research Technologies group.**

The operational headquarters are instead located in a strategic position near the junction of the A1 Valdichiana motorway near Bettolle.

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Head office. Vocabolo Pischiello, 20 – 06065 Passignano Sul Trasimeno (PG) – ITALY

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