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Bayerteq laboratory equipment

Bayerteq is a company with its footprint for many years in the laboratory equipment for the plastic pipe industry. We started as a engineering company doing design & engineering for third parties and we evolved to market our own test equipment which we OEM produce in Asia & Europe.

Our idea is to combine European engineering & partly European components with the low cost structure in Asia where we can also benefit from the production scale which is unrivalled in Europe in this industry.

We operate from Muenchen, Germany and we have our own service hubs in UAE and Russia and we continue to geographically expand our presence with service departments. We carry a full stock of spare parts so we can act quickly to support our clients.

We produce test equipment for the final product, devices to test the raw material and machinery to prepare the samples.

Beside our standard product range of equipment which fulfil all the applicable International Standards we are also pleased to support our customers with any customized equipment which we can fully specify to his/her wishes.

In this presentation you will find our equipment for testing of plastic pipe systems; devices for testing of raw material and preparation of samples.

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Bayerteq Pressure equipment

The Bayerteq pressure equipment is designed to determine the resistance to internal pressure, both short and long term, of thermoplastic pipes. The specimens are subjected to a constant hydrostatic internal pressure at a constant ambient temperature to examine the time-elongation behaviour of the polymer. Our equipment is according to ISO 1167, ASTM D1598-02 and ASTM D5199-99.

Beside hydrostatic pressure tests the Bayerteq pressure series also boosts modules for Burst tests where the series are subjected to an increasing waterflow in order to have the sample burst between 60 and 70 seconds according to ASTM D1599.

Bayerteq offers a wide range of pressure test equipment varying from a small pressure cabinet with 3 or 5 individual stations to large cabinets which can host 30 to 40 stations, pumps up to 18 liter/minute and pressure ranges up to 600 bar.



Bayerteq Thermo water bath

Bayerteq thermo baths are fully made of high quality stainless steel. Further, all the components that come in contact with medium are also made of high-quality stainless steel.

Our baths come in several sizes; ranging from small tanks of 1000*1000*1000 mm to very large baths; we also produce baths on customized sizes.

Double thermal insulation reduces the energy consumption. With water temperatures at 95 degree Celsius the lid of the tank will still stay at room temperature which enhances personal safety and save more than 70% of power consumption. steam collection device keeps steam and heat in the test tank and protect against injury.

Quick couplings simplify the connection of the test specimens. Outer protection plates can be removed to access serviceable parts such as circulation pump, heating elements etc. Service and maintenance can be performed when the tank is filled with water due to the unique design.

Tanks are foreseen with safeguards, e.g. liquid level measuring devices, emergency stop and cord switch ensure the tester to be out of action in case of the test fails or piping system bursts. Doors shall be locked during testing period

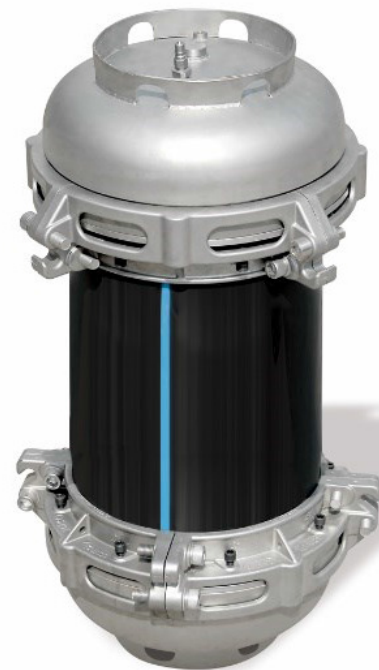
The tanks are equipped with a temperature control cabinet which fully automatically controls both the temperature and the level of the water inside the tank. The over-temperature shutdown is a separate control circuit that ensures that the heaters function reliably, even in the event of a fault.



Bayerteq Endclosures for Polyolefins and PVC, O-PVC

Bayerteq endclosures are fully made out of stainless steel AISI304, ranging from 6 mm to 2000 mm.

- Smart design ensures quick assembly
- Simple and reliable venting directly at the sample



Bayerteq Falling Weight impact tester

The Bayerteq Falling weight impact tester is developed to carry out external impact resistance according to both the staircase and the round-the-clock methods according to ISO 3127, EN 744, EN 1411 and ASTM D 2444 and equivalent.

We offer the impact tester for diameters up to 2000 mm and falling height from 2 meter up to 4 meter. Falling height can be set between 50 mm and 2000 / 3000 mm with anti-rebound system. Falling height can be automatically calibrated.

The Bayerteq impact tester comes with safety features which prevents the machine to be operating while the door is open and is fitted with a two-hand drop release control. The device is designed in accordance with 89/392 EEC.



Bayerteq TCA; Thermal Cycling System

The Bayerteq thermal cycling system is specifically designed to determine the leakage status of composite pipes and fittings when subjected to specified cycling times under specified internal pressure load.

The system complies with the following standards EN 12293, EN ISO 15875-5, ISO 15874-5, EN ISO 13257:2017, EN ISO 19893:2018, ISO 10 508, BS 7291, DWG W 542, DWG W 543, DWG W 534 and equivalent.

Lockable transparent folding doors facilitates easy installation of the pipe samples and allows access from 3 sides.

Per station individual flow rate, circulation time and pressure level can be selected. Th TCA comes with max 6 stations up to DN 63 mm, larger DN is on request



Bayerteq UTM; Universal Test machine

The Bayerteq Universal Testing machine (UTM) boasts a wide variety of tests commonly used in the plastics industry. Beside the classic application tensile test our UTM also performs compression, and bending tests according to a large variety of international standards i.e. ISO 527, ISO 6259, ISO 9967, ISO 9969, ASTM D 638.

The tensile test involves subjecting a sample to an increasing tensile load until it breaks. The force-deflection diagram generated during this test provides information on the load-bearing capacity, elasticity and plastic deformation of the material sample.



Bayerteq Dumbbell specimen maker, HDT Vicat

The tester is used to determine the Vicat softening temperature and the heat deflection temperature under load for plastics and thermoplastics. Our Vicat testers are in compliance with ASTM D 1598, ASTM D 648, ISO 306, ISO 75 or equivalent.

Bayerteq offers 2 different models; our model with automatic weight loading & automatic lifting of the platform, available in 3 and 6 stations and the model with manual weight loading & manual lifting of the platform, also available in 3 and 6 stations. The Vicat tester can be PC operated incl data storage for further analyses.



DMCT / MCT test according to EN 580, ISO 9852 or similar.

The Dichloromethane test specifies a method for determining the resistance of unplasticized PVC pipes to dichloromethane at a specified temperature (DCMT). The method can be used for any homogeneous plain-walled unplasticized-PVC pipes, irrespective of their intended application. It can be used as a rapid means of quality control.

DCMT tests of PVC-U pipes determine the gelation level. Gelation is a process in which the plasticizer diffuses into the particles of PVC resin during heating. The gelation of PVC-U is an important product characteristic as it influences impact strength and resistance to internal pressure the pipe, chamfered at one end so that the complete cross-section of the pipe is in contact with the fluid, is immersed in dichloromethane for a period of 30 min, then successively in baths whose temperature varies by increments of 5 °C, for example.

After the test the sample is subject to a visual inspection; the test pieces are acceptable if there is no attack of the PVC-U.

The Bayerteq DMCT tester allows the operator to safely conduct the DCMT tests by simply placing the test sample inside the test cabinet, close the lid, and set the test parameters on the display. The carriage lowers the test sample into the medium for the selected time. A layer of water acting as a vapour barrier above the test medium.



Pendulum Impact tester; Charpy & IZOD

The pendulum impact tester has been designed to determine the absorbed impact energy and resistance to breakage of plastic specimens.

The Bayerq Pendulum impact tester meets BS 2782, ISO 179, ISO 180, DIN 51 222, ASTM 256, ISO 8256 and ASTM D4812 and equivalent.

Bayerq offers a range of Pendulum tester; models which performs or Charpy or Izod but also models which due to their innovative design performs both tests without changing the geometry.

The Bayerq pendulum impact teste comes with a touch screen with the automatic calibration of energy losses.



RCP; Rapid Crack Propagation

The RCP tester accurately determines the critical pressure and critical temperature for rapid crack propagation in thermoplastic pipes. Bayerteq designed a sturdy construction and separate control panel to avoid sensitive components absorbing the impact energy.

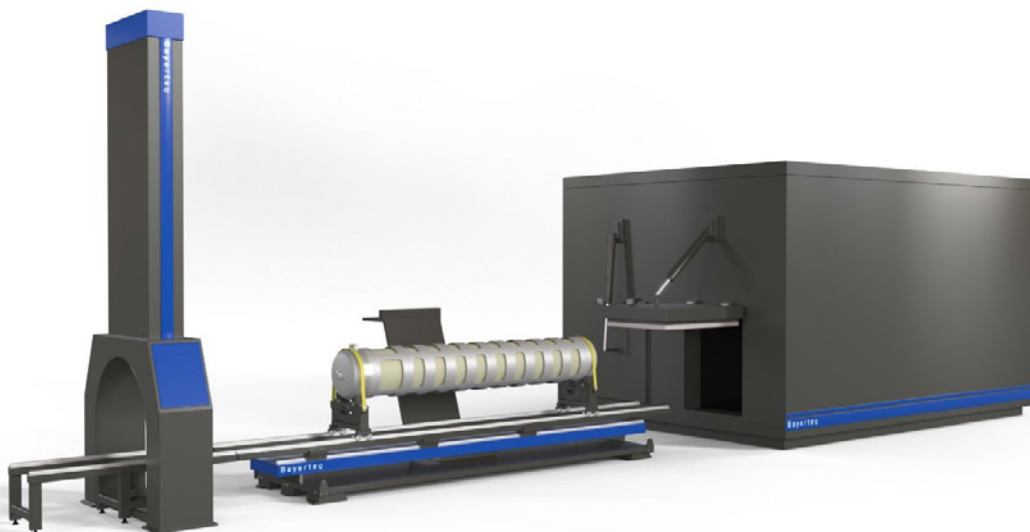
The Bayerteq RCP complies with ISO 13 477.

Speed settings between 1 m/s and 20 m/s.

The RCP comes with an automatic security system which identifies the correct position of the pipe sample and striker automatically which prohibits the striker being released when the pipe sample is not in its correct position.

The RCP is fitted with a touchscreen. For max DN 500mm; larger on request.

The RCP can be extended with an automatic loading platform which moves the pipes from inside the chiller automatically to the correct position inside the RCP unit.



Bayerteq leak Tightness Tester (LTT)

The Leak Tight tester is used to the elastomeric sealing ring type of joints for underground non pressure pipe systems.

According to EN 1277, ISO 13844 or equivalent.

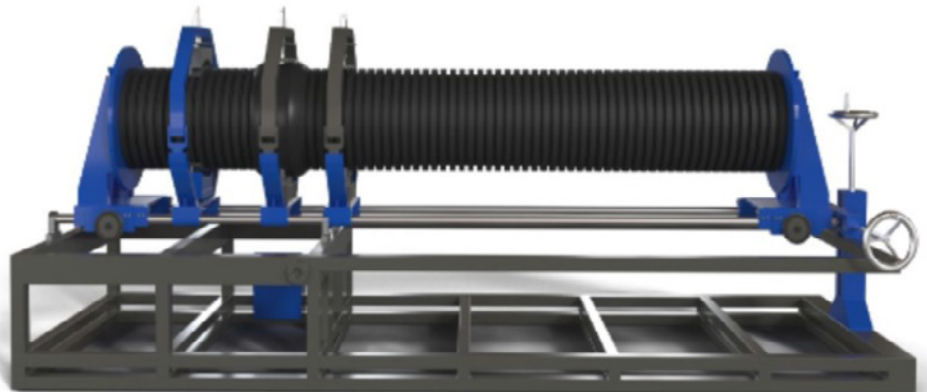
The system configured is suitable for pipe sample testing up to DN 1600 mm and comprises the following components:

- Leak Tightness Tester cabinet
- Module for generating low pressure according to EN1277
- frame for dimensions from Ø110 mm up to Ø1600 mm equipped for high pressure in case required

Test program:

- 1) Test piece is subjected to internal negative air pressure (vacuum) (specified by referring standard)
- 2) Test piece is subjected to internal hydrostatic pressure (specified by referring standard)
- 3) Test piece will be deflected (diametric and/or angular deflection depending on standard).

The test data can be exported to the computer for further data analyses. The BT LTT comes with full data logging as per Standards and is build to last for many years in service.



Bayerteq MFI tester

The MFI tester has been designed to determine the melt flow index (MFI), melt mass-flow rate (MFR) and melt volume flow rate (MVR) of a wide range of thermoplastic raw materials (granulate) by extruding it in a molten state through a calibrated die using a reference weight.

Bayerteq offers models with manual and automatic weight loading and cut off; with an without software for data analyses. Our MFI testers come with latest technology touchscreen with intuitive software. Supplied with fully equipped weight kit up to 21,6 kg and full accessory kits.



Bayerteq Moisture analyzer

The analyzer is a time-saving and easy to use alternative to a drying oven. that measures low water content in solids. The moisture analyzer apparatus complies with the standards EN 12 118 and ISO 585.



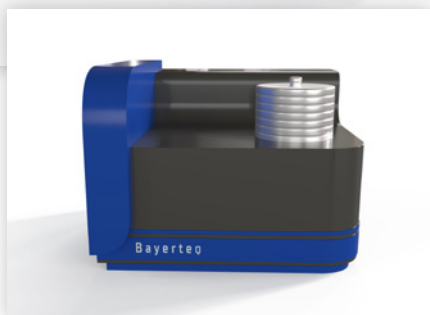
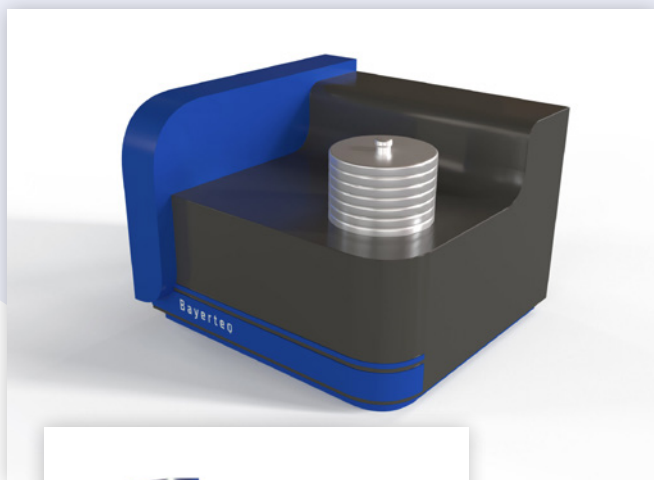
The Bayerteq Nabertherm carbon black tester

This apparatus consists of an aluminium frame combined with a high class oven to be configured dependant on standard choice. Tests may be performed for the determination of the carbon black content of thermo-plastic materials, such as: polyethylene, polypropylene and polybutene. The carbon black content is determined by means of weight difference. The Carbon Black equipment comprises the electric tube furnace and a side panel.. The Carbon Black equipment has been designed and made according to the requirements of the standards: ASTM D1603 and ISO 6964 and serves to determine the carbon black content of thermo-plastic materials, such as polyethylene, polypropylene and polybutene.



Bayerteq DSC for OIT

The BT DSC CN2 800 is designed to determine the inner heat transition relating to temperature and heat flow, it is widely used in the field of polymer development, performance testing & quality control. DSC research and development includes the following field: glass transition temperature, melting point, cold crystallization, crystallization, phase transition, oxidation induction time (OIT).



Bayerteq Notch Milling Machine

The notch test tests the resistance of PE pipes to slow crack growth. The notch milling machine produces V-shaped notches in polyolefin pipes in accordance with ISO 13479. The notched pipes are then subjected to a pressure test. ISO 13479:1997

The BT AX630 comes with industrial PLC control and moveable Large size full color touch screen display terminal and is unrivalled in accuracy.

Main components like the new blade saw and chamfer unit are easy to be replaced.

The milling machine is equipped with a multi-point type to support test piece, which ensures the parallelism between cutting knife and pipe and the repeatability of notch depth.



Bayerteq lab saw

The BT LS630-C is mainly designed for cutting and chamfering of larger diameter pipes. Our lab saw is a typical example of a product which has been designed in close cooperation with plastic pipe producers to ensure the machine fits the market requirements.

The unit is modular designed and is solidly built with high accuracy level, high rigidity, pneumatic clamp, planetary cutting method.

High rigidity, pneumatic clamp, planetary cutting method.

Cutting and chamfering are completed synchronously, largely increasing work efficiency and reducing working strength.

The rotating motor, acts automatically after sample well-clamped, stops automatically while compaction released, as a safety measurement for the operator.

Electronic soft-start function provides the torque for stable start-up at low speed, which reducing the electromagnetic shock to the power supply system.



UV Weathering chamber

Bayerteq's UV weathering chamber is in accordance with ISO 4892-3 and ASTM G154 or similar.

Bayerteq UV weathering resistance test chamber is used in tests that incorporate UV light, temperature, condensing humidity, water sprays, and irradiance control. UV weathering aging test chamber uses UVA-340, UVB-313 fluorescent UV lamps for a variety of test conditions. Accelerated weathering tests included color change, gloss loss, chalking, cracking, crazing, hazing, blistering, strength loss and oxidation and many others. UV series weathering chambers are upgrade to programmable controller and Ethernet access that provides simple operation and control.

- BPT: 35°C ~ +80°C with adjustable
- 8pcs UVA-340 lamps
- Irradiance 0.3~ 20W/m² at 340nm. Can perform the 0.76W/m², 0.83W/m²
- Programmable color touch screen type controller, can set the program of testing.

1. Sample Shelf

Flat specimen holders, aluminum panels with rings.

2. UV Lamp

Equipped with 8 pieces UV lamps, UVA-340, which is air cooling.

Each UV Lamp Power is 40W,

Lamp length 1160mm

3. Controller

PID programmable color touch screen controller, USB port and Ethernet port Ø Can edit 100 programs 20 segment.

LIB also can set program into the controller based on user testing requirements, and repeat the cycles

Display Temperature, BPT, Water Spraying and Irradiance



Oxygen index tester

Oxygen index tester, according to ISO 4589-2 or according to ISO 4589-3

Specifies methods for determining the minimum volume fraction of oxygen, in admixture with nitrogen, that will support combustion of small vertical test specimens under specified test conditions. The results are defined as oxygen index (OI) values.

Methods are provided for testing materials that are self-supporting in the form of vertical bars or sheets up to 10,5 mm thick. These methods are suitable for solid, laminated or cellular materials characterized by an apparent density 100 kg/m³ or greater. The methods might also be applicable to some cellular materials having an apparent density of less than 100 kg/m³. A method is provided for testing flexible sheets or film materials while supported vertically.

For comparative purposes, a procedure is provided for determining whether or not the OI of a material lies above some specified minimum value.

- apparatus for flammability using the oxygen index method, temperature regulation range from ambient temperature to +400 ° C,
- temperature regulation with an accuracy of 0.1 ° C,
- oxygen concentration measurement: 0.1%,
- flow regulation range: from 0 to 20 liters / min,
- automatic calibration for 0 and 100% O₂ concentration,
- supply of nitrogen and oxygen from a cylinder, input pressure 0.25 MPa,



European Engineering meets Far East production

We design & engineer our own equipment in Germany and we have it assembled in our factory in China, which we co-own. For critical components we rely on European or Japanese suppliers like Danfoss, Grundfos, Siemens, Mitsubishi.

Excellence in Service

With an unrivalled network, local presence across all main markets and 20+ years of experience in the Test equipment industry, we can give you peace of mind, allowing you to focus on the things that are most important to you. Beside our current service hubs we continuously expand our presence with service hubs all around the world.

For scheduling maintenance appointments or ordering spare parts, please contact: service@bayerteq.com



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