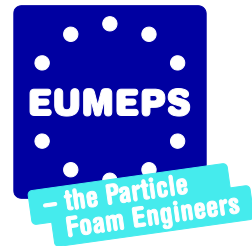


EPS Quality Toolbox

eQTB



EPS QUALITY TEST

The set of four test methods fully describes the quality of EPS, using well defined physical and mechanical parameters.

PC-BASED PROCEDURES

The toolkit is fully operated by a Windows 10 software environment, which supports the operator in all the steps of the measurement and of data storage and analysis.

INDUSTRY 4.0

The toolkit is compliant with the focuses and features of smart factory development according to Industry 4.0 requirements. eQTB 2 is designed to interoperate in the industrial network and to handle big data.



- **Optical analysis:** using specific image analysis algorithms, beads connection and packing are evaluated
- **Fusion test:** the resistance to air flow of EPS is related to the bulk compactness of the expanded structure
- **Screw-based tensile strength:** simple evaluation of mechanical strength of EPS without size and shape restriction
- **Internal humidity test:** highly sensitive instrument to evaluate internal humidity content with one-button operation

The test toolkit eQTB™ has been developed through the collaboration of EUMEPS (European Manufacturers of Expanded PolyStyrene) with Nova Res (a high-tech company based on Material Science and Engineering expertise).

The main goal was to provide to EPS manufacturers a comprehensive and accurate methodology for testing their products overcoming the limitation of standard regulations in terms of:

- shape and size
- sampling
- time consumption

eQTB™ is the result of a 3-years development, resulting in two IT/EU patents, and of an optimisation carried on with EPS producers from several European countries.

In its standard setup, eQTB™ allows the full application of EUMEPS Guidelines to all the types of EPS goods that are listed therein.

The most important features of the toolkit are:

- **robustness**, compliant with industrial context
- **affordability**, with highly reliable hardware construction
- **precision and sensitivity**, comparable to Material Science laboratory equipment
- **easiness and simplicity** of use, it can be employed also by production employees
- **fastness**, as a full characterisation can be done in minutes
- **general purpose**, as it can be adapted to all types of goods produced in EPS

eQTB™ is powered by:



An integrated solution for Quality Assessment

PLUG AND PLAY

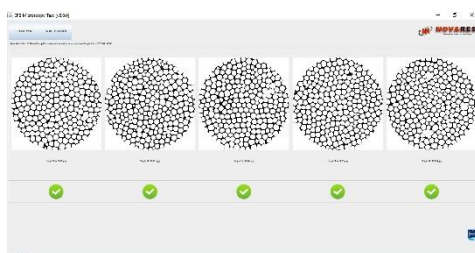
All the eQTB™ toolkit components are connected to the PC by 4 USB ports and automatically configured by the control software. Only one additional power supply needed (screw test) is standard AC100-240V 50-60 Hz). Fusion test apparatus includes all the settings for the use of dry compressed air facility (min. 3 bar best 6 bar inlet).

eQTB™ AND GUIDELINES

Together with the raw data collected in the tests, the software stores the .csv file for each measured batch.

TECHNICAL SUPPORT AND TRAINING

The toolkit is provided with a visual tutorial and installation and operation guide. Two remote sessions (2 hours each) are included for configuration and startup. On-site installation, setup, training and assistance can be provided separately.



eQTB™ use is very simple: the software suite manages the data storage automatically, with automated folders creation and measurement naming. Each test unit is PC-controlled, guided procedures support the operator also with self-loading and alignment procedures for the mechanical test.

An integrated data quality check and analysis routine provides the main parameters of the tested item and automatically prepare and a excel compliant data file ready for analysis.

Cloud-based advanced statistical analysis procedures able to track the production performance, to identify production drifts and to suggest a hierarchical characterization procedure can be integrated**.

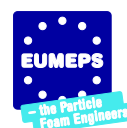
* The standard eQTB™ toolkit performs a simple statistical control of data coherence within repetitions and statistical analysis over a measurement batch, with local data storage. The **eQTB™ Statistics** can include a more complex statistical analysis and a chemometric treatment of all the batch data to define a GQI (Global Quality Index), the hierarchy of significance of the tests and a proactive process control. It can work on a cloud-based architecture with the possibility to include non-standard data in the analysis. Data management and reporting includes a QRCode based tracking with labelling and reporting utilities.

eQTB main features

- Four analytical tests in a single station. Easy and fast measurement setup, high sensitivity and reproducibility, no need of sample preparation
- Windows 10 software compliant with touchscreen devices. All measurements managed by a single PC (not supplied), software and data storage protocol
- Automated data classification and storage, simple statistical analysis compliant with EUMEPS Guidelines
- Customized training and development pack and advanced statistical/process control pack available as optional. Possibility of choosing between on-line and on-site support
- 1-year warranty. Extended warranty available.

ADDON AND OPTIONS

- *eQTB™ learning: group training to develop internal procedure for conformity assessment*
- *eQTB™ Statistics: Advanced statistical/process control pack*
- *eQTB™ Auto: Customised software interface*
- *eQTB™ support on site: Customised support and development pack to define conformity assessment*



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eQTB™ is produced by Nova Res s.r.l. and commercialised by EUMEPS. Full details on the toolkit features, configuration, pricing and delivery are available at the website www.eumeps.org/eqtb. Special pricing policies are applied to EUMEPS members. In several countries, the purchase of the toolkit and the training, setup and development activities can be eligible for funding for Industry 4.0 (or similar) initiatives. All given information can be subjected to change and modifications. For specific requests, please contact eqtb@eumeps.org; for technical informations please contact eqtb@novares.org.