

HITEC

LUXEMBOURG

VOID VOLUME TESTING – PHYSICAL CHARACTERISATION TO ASTM D7854 AND MUCH MORE! FOR CARBON BLACK, SILICA OR OTHER GRANULATE, POWDER & POROUS MATERIALS

The CVST by HITEC Luxembourg is a void-volume tester, measuring void volume versus pressure of a sample. It meets the requirements of the ASTM D7854 "Standard Test Method for Carbon Black-Void Volume at Mean Pressure".

Extensive research by HITEC Luxembourg and its partners has shown that:

- A very detailed physical characterisation can be achieved, obtaining several independent material properties, beyond the basic results from ASTM D7854
- The test method can be equally applied to various granulate, powder and porous materials (.e.g. carbon black, silica, ceramics)

Beyond the void volume data related to structure, the CVST generates additional metrics that reflect the physical properties of the sample.

The fact that the CVST does not need any additives or consumables (like the oil in ASTM D2414 and D3493 methods for oil absorption numbers), not only makes void volume testing a very clean method, but it also results in outstanding repeatability.

From a practical point of view, the compression chamber has been designed to facilitate sample handling, while optimizing accuracy.

KEY FEATURES

Measurement of:

- Void volume vs. applied, transmitted & geometric mean pressure
- Residual void volume reflecting COAN structure
- Material friction losses
- Electrical conductivity of carbon black

Controlled compression and decompression - patent by HITEC Luxembourg

Compatible with various porous materials (tested with carbon black, silica, and ceramics)

No wear parts

Minimal maintenance

1" cylinder standard - ½" optional

CUSTOMER SATISFACTION PROMISE

We offer worldwide installation and training services by our experienced engineers and technicians. Contact our sales & service team for more information: sales@hitec.lu

MEASURING CAPABILITIES

Raw data

- Applied pressure
- Transmitted pressure
- Geometric mean pressure calculated in real-time
- Void-volume during compression and decompression
- Electrical resistance of carbon black

Derived characteristics

- Initial void-volume from compression curve
- Residual void-volume from decompression curve
 - ➔ linear correlation to structure (close to COAN)
- Pressure loss and statistics as function of mass
 - ➔ power correlation to carbon black surface
- Work absorbed by the sample during compression and decompression cycle

FORCE MEASURING SPECIFICS

Force measuring range	95 kN
Measuring accuracy	0.04% FR
Pressure limit 1" cylinder	up to 185 MPa
-with optional ½" cylinder	up to 600 MPa

TRAVEL DRIVE & MEASURING SPECIFICS

Optical linear gauge	170 mm
Measuring resolution	0.5 µm

SAMPLE CYLINDER / PISTON ASSEMBLY

Precision paired - maintenance free	
Standard diameter	25.4 mm (1")

CALIBRATION





Zero-thickness and equipment deflection

OPERATION MODES

Constant speed or constant pressure rate

- freely programmable in wide range
- including ASTM D7854 conditions

DIMENSIONS & SUPPLY

 Power supply	230/115 VAC, 50/60 Hz, 800 VA
 Compressed air	6 bar
 Floor model (incl. Rolls)	610 x 480 x 1310 mm (W x D x H)
 Weight	150 kg

INTERFACES

Serial port (RS232) to standard PC serving as operator interface

SOFTWARE

Menu guided application

Microsoft Windows® 32/64 bit XP/W7/W8

FEATURES

Extensive test sequence support

Extensive data treatment

Extensive data base support

Extended maintenance support

Extensive logging capabilities (all activities in log files)

Full retrieve and copy of previous data: can be installed for retrieve only on any PC having access to result files

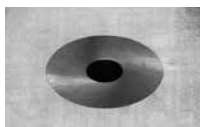
Configurable report generation

Data export (.csv, .xls)

Supports calibration and normalization

OPTIONS

Sample cylinder	½" cylinder and piston assembly
Sample cylinder	1" cylinder for electrical conductivity measurements



For more information contact your HITEC Luxembourg representative:
 Tel +352 498478 - 1 Fax +352 401303 Email sales@hitec.lu Web www.hitec.lu
 49, rue du Baerendall - L-8212 Mamer