

CVST

COMPRESSED VOLUME STRUCTURE TESTER

The CVST by HITEC Luxembourg is a void-volume tester, which is derived and further developed from the ASTM standard D6086 “Standard Test Method for Carbon Black – Void Volume (VV)” and compliant to the ASTM standard D7854 “Carbon Black – Void Volume at Mean Pressure”.

The void volume of a carbon black expressed as a function of mean pressure is a carbon black structure property. The greater a carbon black resists compression by having substantial aggregate irregularity and non-sphericity, the greater the compressed volume and void volume. Compressing carbon black powder breaks its agglomerates and aggregates to a similar extent as in the sample preparation for the compressed oil absorption COAN as per ASTM D3493. By measuring the decompression of the powder it is possible to derive a residual void-volume, which reflects well the COAN – this is naturally intuitive as it describes the powder in a similar physical condition (i.e. in uncompressed state after breaking agglomerates/aggregates).

With an exchangeable compression chamber, it is possible to optimize this new method for best testing conditions. Its control software, which is under constant evolution, can further determine other characteristic responses like material friction, work absorbed by compression/decompression, etc. The CVST by HITEC Luxembourg complies with the present requirements of standards on void-volume, but above all it allows to set up test methods and personalize configurations far beyond the requirements of the related ASTM method.

The CVST can be used for the characterization of other powder materials (silica, ceramics, ...).

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Key features

- Two force sensors for applied and transmitted pressure
- Measurement of:
 - Void volume vs. applied, transmitted & geometric mean pressure
 - Residual void volume reflecting COAN structure
 - Material friction losses (reflecting NSA/STSA surface)
 - Electrical conductivity of carbon black
- Controlled compression and decompression
- Compatible with various porous materials (tested with carbon black, silica, and ceramics)
- Compact design
- Minimal maintenance

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

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

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CVST CHARACTERISTICS

Features of CVST® solutions

	CVST® BASIC	CVST® PLUS	CVST® R&D
Pressure limit	50 MPa	50 MPa	165/600 MPa (1" / ½")
Supported sample cylinder	½"	½" - 1"	½" - 1"
Precision paired - maintenance free cylinder/piston assembly	✓	✓	✓
Measurement of applied and transmitted pressure	✓	✓	✓
Geometric mean pressure calculated in real time	✓	✓	✓
Measuring accuracy	0.04% FR	0.04% FR	0.04% FR
Optical linear gauge specifics (travel drive / measuring resolution)	170 mm / 0.5 µm	170 mm / 0.5 µm	170 mm / 0.5 µm
Calibration mode (zero-thickness and equipment deflection)	✓	✓	✓
VV measure (pressure geometric mean mode)	✓	✓	✓
Normalization curve (ASTM D7854)	✓	✓	✓
Quality editor		✓	✓
Evaluation graphical VV compression curves directly on software and print Export XLSX/ CSV - Multiple XLSX - Print chart		✓	✓
Output table XLSX/ CSV	Basic	Plus	Full
Configurable report generation		✓	✓
Evaluation graphical VV compression curves vs El. conductivity			✓
Evaluation graphical VV decompression curves			✓
Scenario editor	Predefined	Predefined	✓
Printed report	Basic	Plus	Full
Operator interface (not included)	Standard PC	Standard PC	Standard PC
Interface	Serial port RS232	Serial port RS232	Serial port RS232
Software (menu guided application)	Basic	Plus	Full
Data retrieve	✓	✓	✓

Hardware specifications

 Power supply	100-240 VAC 50/60 Hz
 Compressed air	6 bar
 Dimensions (W x D x H)  Including rolls	610 x 480 x 1310 mm
 Weight	150 kg

Safety

- CE marking

All product, product specifications and data are subject to change without notice to improve reliability, function or design.