



## Detecting invisible dangers . . .

Fape/+60 Formaldehyde Test Device – as per EN 717-2

# Fape/+60 – Aim and Function . . .

## The aim

The test installation is used to determine the discharge of formaldehyde by substances which emit formaldehyde. The test requires a precise, reproducible determination of the possible subsequent formaldehyde discharge by wooden materials and components.



## The test

A small air compressor sucks in an air quantity of 60 l/h through a dust filter.

This air is led through distilled water via a washing bottle and the formaldehyde contained in the inlet air is bound. After that, the air flows over a chemical dryer (silica gel dryer) and is dehumidified to a dew point temperature of approx.  $-6\text{ }^{\circ}\text{C}$  in this process. The quantity of air is set at a constant volume of 60 l/h by means of a flowmeter and a needle valve. In this process, the air quantity is to be kept over a period of 4 hours with a constancy of  $\pm 3\text{ l/h}$  since the quantity of air is considered directly in the evaluation of the analysis.

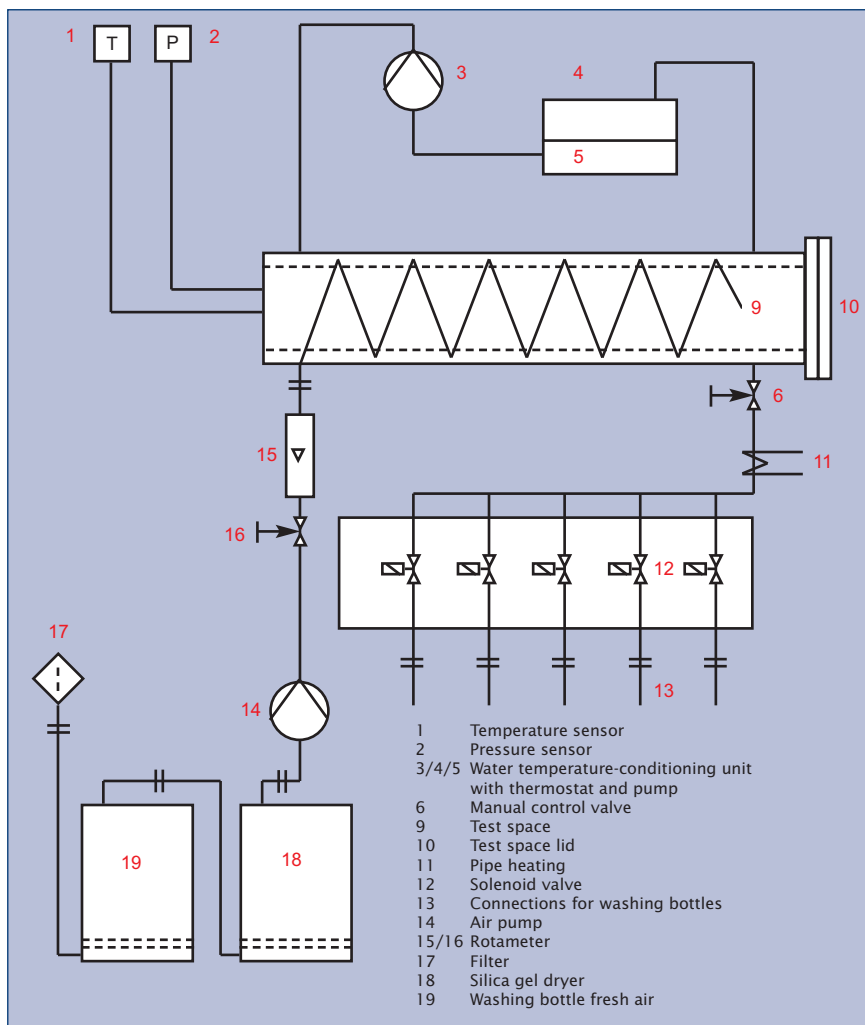
## The test process

1. Preparation of the specimens (3 pieces per test cycle)
2. Preparation of the test device FAPE/+60 (Fill with fresh distilled water prior to every test cycle!)
3. Switch on the testing device "Preparation" (heating to  $+60\text{ }^{\circ}\text{C}$  ( $\pm 0.5\text{ K}$ ))
4. Place specimen 1 in the test space (Do not switch off test device.)
5. Confirm start of testing on the colour touch panel
6. Test is executed automatically over a period of 4 hours.

## The evaluation

1. Mix the washing bottles with the reagents, rinse silicone hoses
2. Heat the cuvette to  $40\text{ }^{\circ}\text{C}$  for 10 min
3. Cool the device down to ambient temperature
4. Repeat the test with specimen 2 (In case there are variations in the results, a test run with specimen 3 is necessary).

## The functional principle of Fape/+60



## Technical data

External dimensions	Height approx.	1050 mm
	Width approx.	600 mm
	Depth approx.	680 mm
Test space dimensions	Cylinder	Ø 96 mm
	Depth approx.	555 mm
Test space temperature	Constant value	+60 °C
Temperature constancy		±0.5 K
Dew point temperature (with silica gel dryer)	approx.	-6 °C
Relative air humidity		≤ 2 % r.h.
Air volume		60 l/h
Constancy of air volume		≤ ±3 l/h
Solenoid valves, automatically reversible		5 pieces
Supply voltage	230 V; 1 Ph + N + PE; 50 Hz	
Connected load		1.5 kVA

## Function of the device

The test space air is heated to a constant temperature of +60 °C ±0.5 K and purged continuously with 60 l/h of temperature pre-conditioned air. The components to be tested are deposited in the test chamber. The test chamber is designed as a gastight area. It is temperature conditioned via the walls and a water pump circuit. The temperature setting is fixed.

Leak-proofness of the test chamber is monitored via a pressure sensor and displayed on the touch-panel (operating console). Setting of the overpressure is effected manually by means of a manual control valve (1000–1200 Pa). In the test chamber, formaldehyde gas is mixed with the inlet air and led into washing bottles filled with demineralised water via the air outlet. The formaldehyde which has gassed out is dissolved in the water.

The routing of the outgoing air is effected by a five-fold distribution with solenoid valves. The air can be released freely into the atmosphere or it is routed via four separate pairs of gas washing bottles (not included in the scope of delivery) which are controlled by a timer.

The solution which is formed in the pairs of gas washing bottles is then evaluated photometrically with a separate measuring device (not included in the scope of delivery).

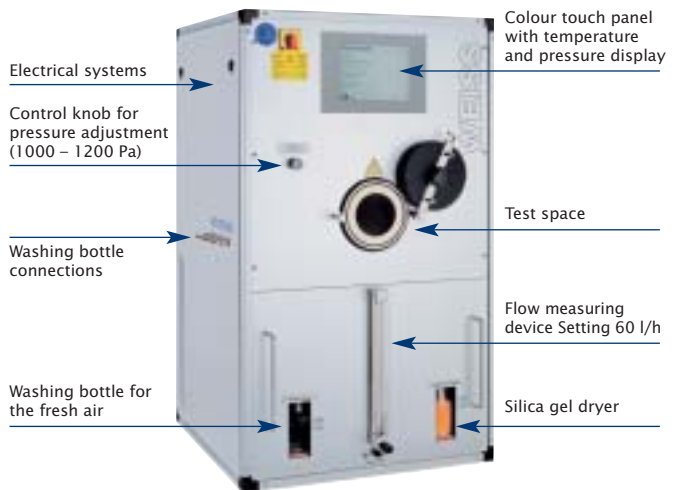
The scope of delivery comprises the functional components up to the solenoid valves which are shown in the schematic overview.



Twin System FAPE

Further test systems as per EN 717-1:  
1 m<sup>3</sup> test chamber method  
12 m<sup>3</sup> test chamber method  
can also be supplied.

## Device layout



## Control system

Operation of the device is effected via the touch-panel (operating console). An operating hours counter is integrated.

The operating interface of the colour touch panel, which has a resolution of 640 x 480 pixels, is menu-controlled for setting of fixed value and program operation (100 programs) with a graphical display of settings and actual values as well as an integrated test program library.

The test cycle generated facilitates a fully automatic execution of testing with the MINCON/32\* measurement and control system.

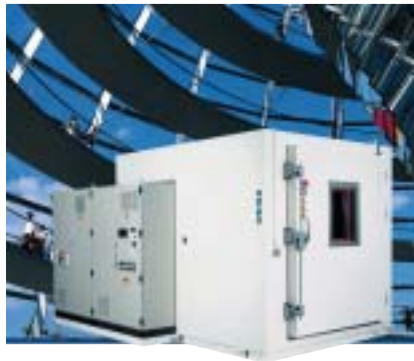


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