MANUAL

DFT 2016

A Door Fan Test Evaluation Program

Developed and owned by:

VIKEX 2000 Ltd

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H-1184 Budapest, Teleki u 57/C

Phone: + 36 1 294 5512; Fax: + 36 1 294 2367

Mail: info@vikex.hu



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INSTALLATION RULES

- Open a new folder on the default hard disc. (For example: C:\)
- Enter folder name as specified below:
- For a 32 bit software: DFT_2016_32_bit (e.g.: C:\DFT_2016_32_bit)
- For a 64 bit software: DFT_2016_64_bit (e.g.: C:\DFT_2016_64_bit)

An installation error or the use of a different name will lead to loosing some of the function like EXPORT and IMPORT of data, might stop the module where different name programmed.

• Download zipped file to the folder you have opened for the program, from:

ftp://ftp.s5.command-center.hu (copy the as web address and not to a search engine title)

🗋 ftp://ftp.s5.command-cer 🗙 📃	1 10 Las 30	
\leftrightarrow \rightarrow C \triangle (i) ftp://ftp.s5.comma	nd-center.hu	
Alkalmazások 🚮 Smoke Machines 🗋	Hitelesítés szükséges A(z) ftp://ftp.s5.command-center.hu felhasználónevet és jelszót kér. A webhellyel való kapcsolata nem privát. Felhasználónév: Jelszó: Bejelentkezés Mégse	×

User name (Felhasználónév): vikexdft

Passworld (Jelszó): Istvan (First letter capital "I")

Log on (Belelentkezés)

 Two program versions are available (make the selection according to your MS Excel):

DFT_2016_32_bit.rar

32 bit version if your MS Office (MS Excel) running is 32 bit.

DFT_2016_64_bit.rar

64 bit version if your MS Office (MS Excel) running is 64 bit.

The MS Excel program version shall be Version 2007 or later.

- Unzip the file within your DFT folder.
- Click twice on the demo program .exe file. Your antivirus software might analyse the program and found suspicious. Do not worry no any virus or warm at the program

- •You can avoid this procedure by disabling the antivirus software during the installation.
- •IF the demo program not working properly, you might need to go to the trust centre and allow the use of macros.(File/Option/Trust center)
- If the demo version starts, the access to the demo program will expire in 30 days.
- The demo DFT will have limited functionality, so you cannot use the save function.
- •A popup window will remind you that you are using a demo program.
- Should you intend to purchase the licence, please contact the program owner. Click on the link Contact Author and send him your computer ID via e-mail.
- The purchased license shall be valid for one year. Upon expiry thereof, you can extend the license for a discount price.
- After you have paid the license fee, you will receive a registration file (rkey) via e-mail.
- Save the rkey file to the same folder where your program is located.
- The program will run with full functionality until the licence expires (one year).
- The purchased license is a single user type of licence, allowing the program to run on the same computer as the one the ID was sent from. If you intend to purchase more than one licenses, please contact the owner of the program.
- The licence may not be transferred to another computer.
- During the term of validity, an upgrade is possible.
- Should you intend to use the program in a language other than those included therein and you will provide for a translation, please contact the program developer.

Main Features of the Program:

The program will guide you through the standard measurement process of a Door Fan Test.

UNITS

The current version of Door Fan Test evaluation program can perform calculations using ISO (EN), SI metric and Imperial (USA) units.

STANDARDS

The DFT 2016 Door Fan Test program will allow you to perform tests according to the following standards:

- a. EN-15004-01: 2008
- b. prEN-15004-01: 2015 (Standard update not available yet!)

c. ISO-14520-01: 2006

- d. ISO-14520-01: 2015 (Significantly changed the formulas and result!)
- e. VdS_2381_2381
- f. CEA_4008_4045
- g. NFPA-2001: 2015
- h. ISO-6183_CO2
- i. VdS-2093_CO2
- j. CEA-4007_CO2
- k. NFPA-12_CO2
- 1. NFPA-12A_HALON

Important! When evaluating the same volume according to different standard options, the program may have different results. The reason for such deviations may be as follows:

The calculation formulae set out in the individual standards are different and the test points taken into consideration in the calculations are not identical either.

Standards ISO-EN-VdS and CEA use temperature and pressure adjustment but NFPA does not. The temperature correction method is also different in the ISO-EN and VdS CEA standards.

The physical constants for Clean Agents specified in ISO, EN, VdS and CEA standards are given for 20°C while in NFPA standards for 21.1 °C (68 °F).

The altitude adjustment ranges differ in ISO/EN and NFPA standards. Calculations according to VdS and CEA standards use altitude values to calculate adjustment, instead of ranges.

NFPA standard applies Tee profile correction in the calculations whereas the rest of standards do not.

CO2 measurements do not conform to any standard because a live discharge test is specified by relevant standards in each case. However, it is recommended to check the volume using a less expensive Door Fan Test prior to a live discharge test in order to define the expected hold time and the equivalent leakage area size.

The use of Halon 1301 is strictly controlled for climate protection reason. The NFPA 12A standard specifies the method for a single test point measurement method.

The single test method does not meet Clean Agent's standard requirements. Under certain conditions, a quick single-point measurement can provide useful information about the integrity of the volume and the extent of possible errors.

NFPA 2001 standard also allows you to make a single-point test evaluation to define integrity if a higher room pressure (50 Pa) cannot be reached by the use of a fan. The program will handle it as follows: when only the first test point has been performed and the cells of other pressures test values are left empty, the program will functions relevant to the single point test to calculate the estimated hold time and equivalent leakage areas.

MINIMUM DESIGN CONCENTRATION

Some standards (such as ISO 14520; EN 15004, VdS_2381 és 2381, CEA_4008_4045 specify the minimum (initial) design concentration. NFPA 2001 standard also specifies minimum design concentration for certain gases. The program calculates from the installed Agent quantity (total weight of the Agent) the initial concentration of the Clean Agent and assigns it to a relevant standard hazard class according to the program setting (Surface Class A, Higher Hazard A, Class B) if the standard concentration needs to be reckoned with. The program also supports the use of any unique concentration supplied by proven by fire tests.

Having knowledge of the minimum design concentration is also important because the minimum extinguishing concentration is calculated by the standards from the minimum design concentration. Having knowledge of the minimum extinguishing concentration is a data of vital importance for integrity test evaluation. Entering the minimum extinguishing concentration in the program is a principal responsibility of the test engineer. According to relevant standards, the minimum extinguishing concentration is 85% of the minimum design concentration. The program will give a recommended calculated value when:

the extinguishing concentration corresponding to the specific fire hazard class is given in the standard, the 85% of this value will be given by the program.

there is no available data in any standard for the minimum design concentration, the program will suggest 85% of the initial clean agent concentration. Since in the case of a careful designing, the actual initial concentration is higher than the minimum design value, the use of such concentration may increase the security margin of the calculated hold time.

MAXIMUM ALLOWABLE EQUIVALENT LEAKAGE AREA (ELA), PEAK PRESSURE

You can use the DFT 2016 program to calculate the estimated maximum allowable equivalent leakage area and the maximum negative and positive peak pressures according in case of a leakage area, without a real integrity test of the enclosure.

After all basic project data has been entered into the program, while the first room pressure test point is empty (or zero) the program will automatically calculate and show these values. These calculated values are based upon a generous calculation under several simplifying conditions, so it's for information only. These simplifications are as follows:

Room reference pressure is 10 Pa,

Hold time is 10 minutes (or the value entered on the project data sheet),

Distribution of the leakage areas F = 0.5 (ratio of upper leakage to lower leakage: 50 %.)

Static pressure considered is Pbh/Pbias = 0 Pa,

Room pressure's power n = 0.5 in mass flow calculation formula.

The estimated equivalent leakage area can be used to compare these values with a theoretical value (summa holes) identified during a visual inspection. If the found total area of holes exceeds the estimated leakage area, the tested hold time is supposed to fail.

In such case, it is recommended to perform a sealing work before the test to such an extent that the total area of holes should be less than the estimated value.

The equivalent leakage area with theoretically allowable size may be useful for the designer of a Clean Agent system to calculate rating of a vent area of appropriate size even at the phase of an offer when no information is available about the integrity of the protected enclosure.

Any mistake on the vent sizing could be a reason of delay or of an extra cost after the installation when the Door Fan Test is performed.

The program supports design of the free vent area, with consideration of the natural leakage of the enclosure. The calculation results can be viewed on the interface screen as well, and you can also print out the vent calculation results.

To enter some additional data required for these calculations into the program for the proper vent calculation, use data input cells on the INTERFACE screen. These data are as given below:

Discharge time (sec),

Structural strength (+/-) of the enclosure (Pa),

Relative humidity in the enclosure (chemical extinguishing agents),

Peak flow rate, or value during discharge (Inert Agents)

Possibly built-in (or designed) negative/positive (chemical extinguishing agents) and positive (inert extinguishing agents) vent area. Some pressure vent types are available in the program with the datasheet of vent area. Other brands can be set when the vent area has to be added by the design engineer.

SITE CALIBRATION

The ISO 14520; EN 15004, VdS_2381 and 2381, CEA_4008_4045 standards require on-site calibration for the same enclosure where the Door Fan Test is carried out.

The NFPA 2001 standard also requires an on-site calibration but recommends to perform it for a different room.

All standards specify that the measured calibration error should be within the given tolerance. Selecting a standard will cause the program to assign a required +/- tolerance to the project. On the INTERFACE screen, the program will show the result and compliance of the calibration test in the case where the calibration test is accomplished.

The DFT 2016 program supports the user to carry out a calibration test. The program will immediately evaluate the test result and display it on the screen.

CALIBRATION PLATE FOR SITE CALIBRATION

The developer of program has produced a calibration plate for the users of INFILTEC blower fans.

Calibration plate:

a. The calibration plate is not a standard components of the blower system, it needs to be ordered separately.



A door cover comprising the calibration holes can be ordered from INFILTEC.

The calibration plate can be inserted into a free opening of the door cover canvas.

Both solutions include calibration holes with plugs.

The corresponding number of plugs (the plugs are the same as the low flow plate plugs of the fan) can be removed from the plate for the calibration test.

After the calibration test, the holes can be plugged in and the test continued in order to minimize loss of time due to onsite calibration.

If you do not need site calibration test, you can leave the test cells of site calibration (pressure, flow) empty. In that case, the calibration evaluation message will be "NO CALIBR".

The calibration test points have been built into both the ISO-EN-VdS, and the NFPA standards, as the DFT 2016 program may be useful even when the calibration is performed in a different room.

For both ISO-EN-VdS and NFPA test, the program will calculate and display on the INTERFACE sheet the recommended size of hole for the calibration test.

The ISO-EN-VdS standard and the NFPA standard calculate the size of calibration hole to be opened in a different way. The program will calculate and recommend the hole according to the selected standard.

If the program specifies a bigger calibration hole than achievable by removing the plugs, it is enough to remove all plugs from the calibration plate and to do the test with the maximum available holes, or open the suggested hole on a less than 3 mm sheet.

The size of opened hole for the calibration test shall be specified by the person in charge of the test in the corresponding cell on the INTERFACE sheet.

LANGUAGES

The DFT 2016 program can support the use of the program in several languages, including preparation of a test report for the customer and/or to the authority, however, the initial version of the program is available in English and Hungarian languages only.

Upon request, other languages can be added. If you wish to use the program in another language and ready to prepare the relevant translation, please contact the program developer.

TEST DATA LOGGING OPTIONS

You can fill the pressure and flow data of the test by manually at the interface screen.

You can use automated direct serial data logging from INFILTEC DM4 digital dual channel micro-manometer.

If you intend to use direct data logging option you need a serial-USB cable at older DM 4, or newer DM 4 may available USB and micro USB connection.

In case of direct data logging you need to install at your computer the RsKey freeware software (read RS232 data from a divice like DM4 and transfer data to the cursor placed the input cell of an excel sheet)

http://www.aandd.jp/products/software/winct.html

SOFTWARE REQUIREMENTS

The DFT 2016 program has been developed under MS Excel software, from which the final program has been produced using DoneEx compiler. The Excel based program greatly relies upon visual basic modules and solutions to work with several internal databases.

INTEGRATED DATABAS'S OF THE PROGRAM

This solution has allowed for an efficient database management for a specific project within the program. The main databases available for assigning to a specific project are as follows:

- (a). CONTRACTOR
- (b). CUSTOMER
- (c). BUILDING
- (d). EYE WITNESS, AUTHORITY
- (e). MEASURING INSTRUMENT (EQUIPMENT)
- (f) PRESSURE RELIEF VENT FOR INERT GASES (ONE DIRECTIONAL)
- (g) PRESSURE RELIEF VENT FOR CHEMICAL GASES (DUAL FLOW)
- (f). "SAVE NEW PROJECT TO DTB" key that opens the customer form with the screen data and adds the data to the project/test database.
- (g). "OPEN PROJECT DTB" key (means manage archive projects) that will allow you to open the customer form and to manage your project/test data. You can use this data sheet also for entering the test key data and test figures but in that case, the test results will appear after saving the data only.

DATABAS'

Every saved data can be selected on the INTERFACE screen from the roll down lists and every database can be accessed with the relevant "EDIT" button. If you cannot find the required data on the screen, click on the key "EDIT" next to the cell, open the corresponding datasheet form and enter the new data to the database. The following operations can be performed for all databases:

GET will find the data in the database by entering your search criteria first, then a search word (a couple of typical letters).

If you want to modify any data, double click on the selected data at the list box to make any changes. After the changes, press

EDIT key to save the changes.

CLEAR ALL will clear not the database but the content of an opened data sheet only, for example before a new search.

CLOSE FORM will close the form.

RESET FORM key press before entering a new data into the datasheet.

ADD button will save the new data into the database.

DELETE button will allow you to delete the selected data permanently from the database. Double click on the selected data then press DELETE. Any deleted data will be removed definitely from the database and cannot be restored.

VIEW (access to the database's sheet button) is disabled

EXPORT DATA TO EXCEL

The program package includes a separate Excel file "DFT_DATA.xlsm" where to you can export your database from the program.

This option is works in case of the proper installation of the program.

At the B58 cell you can find a push button **EXPORT DATA TO EXCEL**

Click to this button open the "DFT_DATA.xlsm" copy all databases of the program. You can find your data at the following sub sheets:

- •IsoEnTEST (All your test data 98 columns!)
- •contractor (All your contrattor tester details, 9 columns)
- •customer (All your customer, 9 columns)
- •building (All your buildings, 9 columns)
- •witness (All your eye witnesses, 9 columns)
- •equipment (All your test equipment's, fan, manometer, temperature measuring device, 16 columns)
- prvinert (All of your Inert Gas one directional Pressure Relief Vents, 9 columns)
- •prvduflow (All of your Chemical Gas dual flow Pressure Relief Vent's, 9 columns)

After exporting your database save back and close the "DFT_DATA.xlsm" file.

At the "DFT_DATA.xlsm" file you can filter your data with standard excel filter options. See below example of "prvduflow":

DUFLOW PRESSURE VE	MANUFACTURER	INSTALLATION	✓ UNIT	POS VENT AREA (+FVA)	NEG VENT AREA (-FVA)	EFFICIENCY @ 100 Pa 📃	REMARKS 🔽 ID 💌
DUX-300	AFP	N/A	m2	0.047	0.077	100	2
DUX-500	AFP	N/A	m2	0.128	0.212	100	3
DUX-700	AFP	N/A	m2	0.216	0.308	100	4
OTHER PRV (ADD+/-AREA)	N/A	N/A	m2	0	0		5
SGV-0301 EXT	Apreco	EXTERNAL	m2	0.025	0.025	100	6
SGV-0301TINT	Apreco	INTERNAL	m2	0.025	0.025	100	7
SGV-0303 EXT	Apreco	EXTERNAL	m2	0.059	0.059	100	8
SGV-0303 INT	Apreco	INTERNAL	m2	0.074	0.074	100	9
SGV-0501 EXT	Apreco	EXTERNAL	m2	0.041	0.041	100	10
SGV-0501TINT	Apreco	INTERNAL	m2	0.041	0.041	100	11
SGV-0505 EXT	Apreco	EXTERNAL	m2	0.163	0.163	100	12
SGV-0505 INT	Apreco	INTERNAL	m2	0.205	0.205	100	13
SGV-1010 EXT	Apreco	EXTERNAL	m2	0.65	0.65	100	14
SGV-1010 INT	Apreco	INTERNAL	m2	0.82	0.82	100	15

Filter installation

CTU	RER 🔄 INSTALLATI	ON	v
₽↓	Sort A to Z		
Ă↑	S <u>o</u> rt Z to A		
	Sor <u>t</u> by Color		Þ
ĸ	Clear Filter From "INSTALLA	TION"	
	Filter by Color		Þ
	Text <u>F</u> ilters		Þ
	Search		ρ
	(Select All) EXTERNAL INTERNAL N/A (Blanks)		
DUFL	OW PRESSURE VEN 🔽 MANUFACT	TURER	- 1

DUFLOW PRESSURE	VEN MANUFACTURER	INSTALLATION	J UNIT	Y POS VENT AREA (+FVA) V NEG VENT AR	EA (-FVA) 🔽 EFFICIENC	Y @ 100 Pa 🛛 🔽 REMARKS	▼ ID ▼
SGV-0301 EXT	Apreco	EXTERNAL	m2	0.025	0.025	100	6
SGV-0303 EXT	Apreco	EXTERNAL	m2	0.059	0.059	100	8
SGV-0501 EXT	Apreco	EXTERNAL	m2	0.041	0.041	100	10
SGV-0505 EXT	Apreco	EXTERNAL	m2	0.163	0.163	100	12
SGV-1010 EXT	Apreco	EXTERNAL	m2	0.65	0.65	100	14

De-filter after use

сти	RER 🔽 INSTALLATION	. T
₽↓	Sort A to Z	
Ă↑	Sort Z to A	
	Sor <u>t</u> by Color	Þ
5	Clear Filter From "INSTALLATION"	
	Filter by Color	Þ
	Text <u>F</u> ilters	×.
	Search	P
~	Select All EXTERNAL INTERNAL N/A (Glanks)	

Before you save this file, please set back all filtering you used, to avoid not proper copy of data back and force!

IMPORT DATA FROM "DFT_DATA.xlsm" TO THE PROGRAM

The button is normally hidden to avoid accidental import (like empty Excel)

Press the 🕈 button next to "Fan 1 mass flow"

MANUAL DATA INPUT AND DISPLAY TEST POINTS													
TEST MAX FLOW AT 60 Pa ROOM PRESSURE : 1698 (m3/h) 1 PCE FAN MAX FLOW (INFILTEC E3=9500) /ADD VALUE/ 9500 m3/h ESTIMATED NR OF FAN NEEDED TO TWS: 1 pcs													
AGENT AIR MIX MASS (Pmi)Pa	29.10		0.00	STATIC PRESSURE AC	CEPTANCE	ADDED C	ALIBR HOLE	400	cm2	ADVISED CALIBR HOLE		387.8	cm2
ROOM PRESSURE (P)	P-STATIC DRAFT DIRECTION	ISO-Pmi/2		ISO-Pmi	ISO-P3	ISO-P4	ISO-P5	ISO+Pmi/2		ISO+Pmi	ISO+P3	ISO+P4	ISO+P5
ADVISED PRESSURE (Pa)	From Room	14.6		29.1	10.0	48.0	60.0	14.6		29.1	10.0	48.0	60.0
CLEAR TEST DATA Pa	0.0	10.0	10.0	20.2	31.1	40.6	50.6	10.7	10.0	20.8	30.9	40.9	50.5
💠 Fan 1 mass flow	m3/h	694.0	950.0	1033.0	1319.0	1533.0	1743.0	917.0	1280.0	1395.0	1672.0	1940.0	2199.0
SUM MASSFLOW (Q) (ISO-Qlm/2		ISO-Qlm	ISO-Q3	ISO-Q4	ISO-Q5	ISO+Qlm/2		ISO-Qlm	ISO +Q3	ISO +Q4	ISO +Q5
m3/h)	m3/h	694.0	950.0	1033.0	1319.0	1533.0	1743.0	917.0	1280.0	1395.0	1672.0	1940.0	2199.0
EXPORT DATA TO EXCEL		ACCEPTANCE OF NEG CALIBRATION	-9.7%	"NEG PRESS" TEST POINTS CORELLATION	1.0000	HOLD TIME (NO CONTINOUOS MIX)	10.71	ACCEPTANCE OF POS CALIBRATION	2.9%	"POS P" POINTS CORELLATION	0.9983	HOLD TIME (CONTIN MIX)	6.12

Appears the hidden rows, with the *___*.button to hide with the added rows again.

AGENT AIR MIX MASS (Pmi)Pa	29.10	
ROOM PRESSURE (P)	P-STATIC DRAFT DIRECTION	ISO-Pmi/2
ADVISED PRESSURE (Pa)	From Room	14.6
CLEAR TEST DATA P	a <u>0.0</u>	10.0
💠 Fan 1 mass flov	v m3/h	694.0
💻 Fan 2 mass flov	/ m3/h	
Fan 3 mass flov	/ m3/h	
Fan 4 mass flov	/ IMPORT DATA m3/h	
Fan 5 mass flov	m3/h	
SUM MASSFLOW (Q) (ISO-Qlm/2
m3/h)	m3/h	694.0
EXPORT DATA TO EXCEL		ACCEPTANCE OF NEG CALIBRATION

If you push the "IMPORT DATA FROM EXCEL" button the "DFT_DATA.xlsm" opens all data copy to the program replacing the data at the program.

UPDATE PROGRAM

If any update of the DFT 2016 program is available do the following steps

- •EXPORT your data from the program to "DFT_DATA.xlsm" file.
- •Replace your program with the updated version.
- •IMPORT your data from "DFT_DATA.xlsm" file to the program.

NOT STANDARD VOLUME TO TEST

The DFT2016 program is designed to evaluate "standard spaces" (vertical sections are almost identical). Should you wish to test other than standard spaces, it is recommended to use no mixing hold time because the functions specified in the standard are difficult to use in practice.

STORED DATA

The DFT 2016 program is designed not to store the results of the test. However, call back "GET" the input data, it will recalculate any project and test anytime. A recommended method is to print the test report also in pdf format and save the report for further use.

DATA REQUIREMENTS TO DO THE TEST

The standard data requirements for a Door Fan Test data supply are as follows:

EN ISO 15004, 14520, VdS, CEA	NFPA 2001
 (a) the average characteristics of the flow formulae (k1, n) 	 The date, time and place of the test.
(b)) The type of the clean agent, initial and minimum extinguishing concentration.	 Names of the eye witnesses, if any.
(c)) The amount of the available clean agent.	 Dimensions and size of the volume.
(d)) Net volume of the tested room	 All of the data arised during the test, including computer printouts.
(e)) The height of the flooded enclosure,	 Special technologies applied during the test (ceilings temporarily insulation, neutralisation of the falls ceiling.
(f)) Hazard height	 Full explanation of the technical decisions and documentation of the decisions.
(g)) Standard or Expected hold time, this value normally should exceeds than 10 minutes,.	 Manufacturers of the test instruments with type and serial number.
(h)) The test conditions and the status of the volume, environment, and services.	 The test devices valid calibration certificates.
 (i)) Current calibration data for the fan and the micro, if available, on-site calibration results 	 The test company and the person's name and signature.
(j)) Test results, including the investigation and appropriate fixed values.	
(k)) The size and distribution of the holes at the enclosures, if specified.	

TEST RESULTS

The program will calculate and display the no mixing and mixing test results on the INTERFACE screen during the test.

SELF MONITORING OF THE PROGRAM

DATA ACCEPTANCE

A number of self-monitoring routine are installed in the DFT 2016 program, helping you make a proper assessment about the test data and corresponding values.

If the data in the assessment cells are within the acceptable margin, dark green

numbers appear on green background: ^{10.71}, whereas if the data in the cell do not comply with the requirements, dark claret-coloured numbers appear against a

claret-coloured background: 6.12

These colour indications will also appear in the test report.

The data input cells differ standard by standard. Not need to use the grey/red cells at the selected standard. Only the yellow cells need to use.

N/A at ISO, EN, NFPA 0.00 m

DECIMAL NUMBERS

The programme is made at English MS Excel, where the decimal part of the number separated with (1.1) DOT.

If you use (1,1) COMMA instead of DOT, the Excel interpret the cell as text. If you add text to the cell instead number, all calculation using this cell turn wrong.

If you use an English MS Excell the program remind you for the mistake turning the yellow cell dark claret-coloured numbers appear at a claret-coloured background.

If you add number the cell looks like this:

4.10

If you add text the cell (even number with decimal COMMA). The cell turn like

The DOT or COMMA decimal separation at Excel depends on the language settings.

If you use such Excel where COMMA is the decimal separator the above data validation does not work.

Some Excel setting except COMMA as decimal separation.

Try it on how your decimal separator working to avoid wrong calculations.

SUSPENDED CEILING NEUTRALISATION

The same program can be used for NFPA 2001 C. 2.1 "Total Enclosure Leakage Method ", and for C.2.6.2. Optional "Suspended Ceiling Neutralisation Method", the space and the test data shall correspond to the above specifications.

How to use the program?

GENERAL COMMENTS

The use of the program expects the existence of MS Excel (Office) 2007 or a later version on the destination computer. The program has been developed under the English version of MS Excel 2013. In regard to the extensive use of visual basic background programs, you may find that some program functions do not work properly in some Excel versions.

Therefore, before buying the program, make sure that the demo program is working properly on your computer. If not, then do not buy this program, as we cannot provide different program versions.

The program works in an appropriate manner under MS WINDOWS 7-10 operating system. In some cases we have fund some mal functions.

If the program demo version does not work properly under your WINDOWS operating system, try to find another computer for the Door Fan Test, or do not buy the DFT 2016 program.

Due to the starting size of the program ~ 10 MB which grows with the new data, due to the huge calculation at the background We suppose to use strong and fast hardware.

Based on our experience the program runs properly on a 32-bit computer, Windows and Office (Excel). We can provide 64-bit program version as well, but we cannot verify the proper operation of the 64 bit program version.

We do not propose you to purchase the program license unless you have downloaded the Demo version and it runs properly on your computer.

In the case of purchasing the program license, a registration code (rkey) will be assigned to your computer and sent to you. The rkey must be saved into the same directory as the one the program is found in.

The purchased license will allow you for a one-year full function use of the program on one dedicated computer. The license may be extended at a discount upgrade price, after the expiration of the one-year licence.

To enter project details and test data use the yellow cells and thr brown drop-down lists of the databases on the screen.

Using the program

The content and use of the INTERFACE screen.

All the data of the PROJECT and TEST can be entered on the INTERFACE screen

1	F-:					DET 2016	ÉCTÖM	DEC MÉR	ÉC VIÉ	DTÉVELŐ	DDOCD	AM			
	Fejlesztette	VIKEV 2000 K# Mindra log Empt Tartua Talaki u 57/C H 1194 Budapart info@vikev bu										20	. 20 0220772		
			VIKEX 2000 Km		iviinden J	og Fennt Tartva		Teleki u 577	C, H-1184	Budapest		Into@vike	<u>x.nu</u>	50	20 9529775
	NYELV		HUNGARIAN		- a r	negfelelő számítási er	edményekhez	válassza ki a szül	kséges adato	otokat valameni	nyi barna le	gördülő menűb	ől és vigye be az	összes adatot a	sárga cellákba -
÷	PROJEKT ÉS TESZT A	DATC	OK BEVITELE	ÁL	TALÁNOS	BEMENŐ ADATO	ок	TEREM GEO	METRIAL	ÉS PROJECT A	DATOK	S	ΖΑΜΙΤΟΤΤ Ρ	ROJECT ADA	ток
+	NYOMÁSLEVEZETŐ	SZÁM	ÍTÁSOK												
÷	LÉGTÖMÖRSÉG MÉ	RÉSI E	REDMÉNYEK KIÉRTÉ	KELÉSE ÉS	GRAFIKUS	MEGJELENÍTÉSE	E								
+	MÉRÉSI EREDMÉNY	K GR	AFIKUS MEGJELENÍT	ÉSE & UTÁ	NFÚVÁS É	ERTÉKELÉSE & N	IYOMÁS LE	VEZETÉS ÉS 1	TEREM C	SÚCS NYOM	ÁSOK EL	ÁEASZTÁS	KOR		
	MÉRÉSI ADATOK KÉZI BEVITELE ÉS MEGJELENÍTÉSE														
	MÉRÉS BECSÜLT T ÁRAMA 60 Pa NYOMÁSON : 1698 (m3/h) 1 DB VENTILL. MAX T.ÁRAM (INFILTEC E3=9500) /ADD VALUE/								9500	m3/h	BECSÜLT VENTILLÁTOR. DB SZÁM: 1 pcs				
	GÁZ LEVEGŐ MIX TÖMEG	Pmi)Pa	29.10		0.00 STATIKUS NYOMÁS ELFOGADHATÓSÁGA NYITOTT KALIBR RÉS			400	cm2	AJÁNLOTT KAL	IBR RÉS	387.8	cm2		
	TEREM NYOMÁS (F)	P-STATIKUS HUZAT IRÁNY	ISO-Pmi/2		ISO-Pmi	ISO-P3	ISO-P4	ISO-P5	ISO+Pmi/2		ISO+Pmi	ISO+P3	ISO+P4	ISO+P5
	AJÁNLOTT NYOMÁS (Pa)	From Room	14.6	14.6	29.1	10.0	48.0	60.0	14.6	14.6	29.1	10.0	48.0	60.0
	CLEAR TEST DATA	Pa	0.0	10.0	10.0	20.2	31.1	40.6	50.6	10.7	10.0	20.8	30.9	40.9	50.5
	💠 Fan 1 tör	n áram	m3/h	694.0	950.0	1033.0	1319.0	1533.0	1743.0	917.0	1280.0	1395.0	1672.0	1940.0	2199.0
	ÖSSZESÍTETT TÖMEGÁRA	M (Q)		ISO-Qlm/2	-Qcalibr	ISO-Qlm	ISO-Q3	ISO-Q4	ISO-Q5	ISO+QIm/2	+Qcalibr	ISO-Qim	ISO +Q3	ISO +Q4	ISO +Q5
	(m3/h)		m3/h	694.0	950.0	1033.0	1319.0	1533.0	1743.0	917.0	1280.0	1395.0	1672.0	1940.0	2199.0
	EXPORT DATA TO EXCEL)		NEG KALIBRÁCIÓ ELFOGADÁS	-9.7%	"NEG NYOM" TESZT PONTOK KORELLÁCIÓJA	1.0000	TARTÁSI IDŐ (NINCS FOLY KEVEREDÉS)	10.71	POZ KALIBRÁCIÓ ELFOG ADÁS	2.9%	"POZ NY" ÉRT KORELLÁCIÓJA	0.9983	TARTÁSI IDŐ (FOLY A KEVEREDÉS)	6.12
٠	AUTOMATIKUS ADATBEV MÉRSI ADATOK MÁSOLÁ	ITEL; 6A↑	↑COPY STAT PRESSURE	↑COPY - P1 TEST	↑COPY -P CALIBR	↑СОРУ -Р2 ТЕST	↑COPY - P3 TEST	↑COPY -P4 TEST	↑COPY -P5 TEST	↑COPY +P1 TEST	↑COPY +P	↑COPY +P2 TEST	↑COPY1 +P3 TEST	↑COPY +P4 TEST	个COPY +P5 TEST
			÷			·									

If you press the + button find at the sub title rows, you can open the relevant section of the

program. The — button appears at the open sections can be push to close the section.

LANGUAGE SECTION

LANGUAGE ENGLISH

Click to the brown cell to select language

LANGUAGE	ENGLISH	-
ENTER PROJECT & T	ENGLISH HUNGARIAN	-
PRESSURE VENTING	SERBIAN CROATIAN	Ξ
EVALUATION OF DO	DENISH NORWEGIAN	
TEST RESOULTS AT (SWEDIS GERMAN	Ŧ

PROJECT & TEST DATA SECTION

÷	ENTER PROJECT	T & TEST D	АТА	GENER	AL INPUT DATA		ROOM DIMENSIONS & I	PROJECT DATA	4	CALCULATED	PROJECT I	DATA
-	LOOKUP TEST (BUILDING & Ritz ROOM) Szer		Ritz_Carlton Hotel Szerverterem	CLEAN AGENT	FK-5-1-12	NOVEC-1230, SAPHIRE	N/A at ISO, EN, NFPA	0.00	m	AGENT AIR MIX MASS (Pmi)	29.10	Pa
	SAVE NEW PROJE	ECT TO DTB	GET SELECTED DATA	FIRE HAZARD CLASS	HIGHER HAZARD A	NFPA=CI C; VdS/ CEA=lt/Els w	N/A at ISO, EN, NFPA	0.00	m	ROOM FLOOR AREA	0.00	m2
	CLEAR DATA FROM	THE SCREEN	OPEN PROJECTDTB	N/A at ISO, EN, VDS	No Tee Corr	Factor: 1	ROOM HEIGHT (Ho)	4.00	m	ROOM'S COVERED SURFACE (VDS&CEA!,	0.00	m2
	CONTRACTOR	EDIT	G4S Bizronságtechnikai	AMBIENT PRESSURE UNIT	Hecto Pa		HAZARD HEIGHT (H)	2.00	m	HAZARD HEIGHT (H, ISO:He)	2.80	m
	CUSTOMER'S	EDIT	0	AMBIENT PRESSURE VALUE	1015.00	Hecto Pa	N/A at ISO, EN, NFPA	0.00	m3	AGENT QUANTITY (Q= VALUE)	72.00	kg
	BUILDING	EDIT	0	UNIT OF CLEAN AGENT QUANTITY	AGENT MASS Q		UNCLOSABLE OPENING	0.00	cm2	ADVISED MIN DESIGN C%, IF SANDARD VALUE GIVEN	5.60	%
	EYEWITNESS	EDIT	Ó	AGENT QUANTITY (Q= VALUE)	72.00	kg	N/A at ISO, EN, NFPA	0.00	m3	ENCLOSURE NET VOLUME (V, VDS&CEA!, =Vv)	83.75	m3
	TEST DEVICES'	EDIT	INFILTEC VIKEX 2	MIN EXTINGUISING CONCENTRATION (C %)	4.76	%	NET ROOM VOLUME (ISO, EN, NFPA!, =V)	83.75	m3	AVISED MIN EXTINGUISING C%	4.76	%
	UNIT	CHANGE	METRIC UNITS	F= "LOWER LEAKAGE RATIO"	F=0,15 ре>ра		MIN ROOM TEMPERATURA	15.00	oC	AGENT INITIAL C% (Ci)	5.72	%
	APPLICABLE STAN	IDARD	EN-15004-01_08	N/A	0.00		ALTITUDE	100.00	m	AGENT AIR MIX MASS (Pmi)	29.10	Pa
	MIXING OR NOT DUE TIME	RING HOLD	CONT MIXING	ROOM INSIDE TEMPRATURE	20.00	oC	HOLD TIME (t)	10.00	min	HOLD TIME (NO MIX/MIX)	10.71	6.12
	DATE dd/mm/yyyy	,	2016/ 12/ 12.	AMBIENT TEMPERATURE	-1.00	٥C	FLOODING TIME (td)	10.00	sec	DISCHARGE TIME OK?	10.00	sec

ENTER PROJECT & TEST DATA

ENTER PROJECT & TEST DATA	l l		
LOOKUP TEST (BUILDING & ROOM)		Ritz_Carlton Hotel Szerverterem	5 LOOKUP TEST
SAVE NEW PROJECT TO DTB	① SAVE NEW DATA	GET SELECTED DATA	⑥ GET DATA
CLEAR DATA FROM THE SCREEN	② CLEAR DATA	OPEN PROJECT DTB	⑦ OPEN PROJECT DATABASE
CONTRACTOR EDIT	③ EDIT (CONTRACTOR)	G4S Bizronságtechnikai Zrt.	(8) SELECT CONTRACTOR
CUSTOMER'S EDIT	③ EDIT (CUSTOMER)	0	(9) SELECT CUSTOMER
BUILDING EDIT	③ EDIT BUILDING	0	1 SELECT BUILDING
EYEWITNESS EDIT	③ EDIT WITTNESS	0	1) SELECT WITTNESS
TEST DEVICES' EDIT	③ EDIT EQUIPMENT	INFILTEC VIKEX 2	12 SELECT EQUIPMENT
UNIT	(4) CHANGE UNIT	METRIC UNITS	③ SELECT UNIT TYPE
APPLICABLE STANDARD		EN-15004-01_08	(4) SELECT STANDARD
MIXING OR NOT DURING HOLD TIME		CONT MIXING	(5) SELECT MIXING CONDITIONS
DATE dd/mm/yyyy		2016/ 12/ 12.	16 TEST DATE

1 SAVE NEW DATA

Use this button **SAVE NEW PROJECT TO DTB**, if you have a completely new test ready at the Interface sheet and you want to add your project to the database.

The button open the save data form, pick up all project and test data from the interface sheet

OPEN AND SAVE	NEW DOC	R FAN	TEST																×
	-	_			NFW	PRO	JECT	'S TES	T TO S	AVF A	тт	HE DA	TAD	ASE					
BUILDING N/IME(P	ROIECT N	DOM NA	ME (SUB NR)	E	ILDING & ROOM		TEST'S ID	0 00	INTRACTOR	CUS	TOMER'S		BUILDI	vc	EY	EWITNESS		TEST BRANCES	UNIT CHANGE
	-ŕ							G45 B	zronságrer 🔻	Samble	elM imn	1 -	m Irncah	Á7 💌	0	•	• INFI	ITEC VIKEK 1 💌	
STANDARD	STANDARD CLEAN AGENT SITE CLEVATION UNIT THE			TECO	FECTION (NF	FP AG		VALLE	UNIT	HAZARD C	LASSIFICATIO	ON N	IN DIT C%	F-ELADIST	RELITION	F-CALCULATED	MIXING OR NOT		
EN-15004-01 0	8 🔹	FC-227	•• •	100	m	NoTe	e Corr 🚽	AGENT	MASS C 🔫	82	kg	HOHERI	AZARD A	-	7.23	F-0,5 Hi-	Low 🔻	D	
ROOM LENGHT (M	ROOM WIDET	(1038.0	ROOM HEIGHT (Hv) HA3	ARC BEIGHT (B)	UNIT	DEDUCT	ABLE VOLUME (NET VOLUM	E UNIT	unc	LOSABLE DPENI	« UNIT		N ROOM TEN	IPERATURA	UNIT	FLODING TIME se	HOLD TIME (min)
0	0	-i	3		2	m		0	75	mB		0	um2		15		υC	10	10
STATIC PRE	ATIC PRESSURE, TEMPERATURES & AMBIENT PRESSURE																		
DRAFT MOVES	STATICI	RESSURE	UNIT	INSIDE TE		TS. TEMPRE	RATURE	UNIT AM	BIENT PRESSURE	UNIT PRESS	.RS	EXT DISC:	l (min)	AGENT	UANTITY	UNIT	ARCHIN		CATE (mm,ktil/yyyy)
From Room	-	0	Pa	:	0	6		οC	1015	•C	-	10			0	kg	1.	.13	3/12/2016
DEPRESSUR	ISATION	TEST										PRES	SURTS/	TTON 1	IFST				
LOCCING THE TES	ISO Pmi/2 (3	1.7	ADVISED CALLE	IR HOLE	Peelibr (10.1)	150-F	mi (23.4	ISO P3 (33.4)	ISO F4 (41.2)	ISO PS (S	1.5)	ISO (Preis	2 (11.7)	(Peelibr)	11.7 150 1	Pmi (23.4)	ISO (P3 (33	.4) BOIP4 (41.6	150 (P5 (52.0)
2°2	10.1		92.8		10.3	2	1.1	30.2	40.5	51.2		10	2	10.3		20.8	31.2	41.4	51.d
STATIC PRESSURE (150-0im/2	A	DED CAUSE HO	UNIT	-Qcallbr	150	-Qim	150-03	150-Q4	150-0	15	ISOHOL	m/2	+Cycallin	r 150-	-Olm	150 +03	150+Q4	150 ±0,5
1 m3/m	167		100	unz	276		27	400	5//	650		10	9	290		5/4	503	615	705
- ENCLOSURE	. PLAK PI	ESSU	RE & VEN	CALCU	LATION -	_ I	IERT VEN	IT (ONE FLO		N)					CHEMIC	AL VENT (I	DUAL FLO	DW)	
	HOLE SET	ING (PEA	AK PRESSURE	CALC)		A	ING DISCH GA	AS FLOW	EAK FLOW OF RAT	10 VAL		THER BILL AN	EA UNI	•	RELATIVE HU	JMIDITY RH9:	CTHER B	R-AREA CTHERER	A AREA UNIT
	VENT+U	NK//GEE	EASED ON TES	T	-		NOTINE	ERT F	Peak Flow Rate	- 1		0	cm	2	9	50	0	0	cm2
NEW STRUCT STRENG								INFR	VENTS PO		18101-01010	/ VINI			DUFLOW PRV: PCE				
250		250 250	Pa		100	5	1X-UN-500)				-	1		DUX-300			•	1 🗾
REMA	ARKIS	Γ																	2. mérés
Add N	ew Test														View Te	st		Close Fr	1TD
													_					THE EW. TU	

You need to fill out the first 2 cells and the 4th cell, but mandatory to fill these cells to archive your project.

- •BUILDING NAME (PROJECT NR, we advise to add)
- •ROOM NAME (SUB NR, we advise to add)
- •The 3rd "grey cell automatically filled up with the first 2 cell data. You can Look Up project at the database searching to this cell information's.

BUILDING NAME (PROJECT NI	ROOM NAME (SUB NR)	BUILDING & ROOM	TEST'S ID
Building 1	Room 1	Building 1 Room 1	12345678

•You have to add a unique TEST'S ID at the 4th cell. You cannot add same ID for different project. You cannot modify the ID after you saved the project. We advise to use for ID nr the combination of Project (Building) nr and Sub (Room) nr.

You can modify your data before save, however, you can not see how effet the changes the test results.

If you are ready to save	Add New Test	button	
than close the form with	Close Form	button.	

2 CLEAR DATA

The CLEAR DATA FROM THE SCREEN button will erase all data at the Interface sheet. We advise to use this button if you start a new project, not to remain any data from the previous project.

3 EDIT

You can find an "EDIT" button at all below database rows for the case if you can not find relevant data for your project, click to the relevant "EDIT" button and add the new data to the database.

(4) CHANGE UNIT

With the button you can change unit from METRIC to IMPERIAL or IMPERIAL to METRIC, the repeated push of "CHANGE" button, change back the unit.

By changing the unit, all input data at the Interface sheet recalculated to the selected unit.

5 LOOKUP TEST

All saved project possible to find at the C5 cell. You can select a project at this call.

ENTER PROJECT & TEST DATA LOOKUP TEST (BUILDING & ROOM Ritz Carlton Hotel SAVE NEW PROJECT TO D SAVE NEW PROJECT TO D CLEAR DATA FROM THE SCI CONTRACTOR CUSTOMER'S EXAMPLE 2012 CUSTOMER'S EXAMPLE 2012 CONTRACTOR EXAMPLE 2012 CUSTOMER'S CUSTOM

6 GET DATA

If you push the GET SELECTED DATA button all data of the above selected project will upload to the Interface sheet and all the calculation will be one again. Ready to print or reprint any report.

If you modify your archive project at the Interface sheet, this will not modify the database, however if you want to save the modified Interface data, you can use the "SAVE THE NEW PROJECT" button.

This option can be useful, if you return to a previously tested room, no change on the project data.

You can clear the test data (see later), load the new test data and save the retested details.

⑦ OPEN PROJECT DATABASE

If you push. OPEN PROJECT DTB button, you can manage all of your data at the data base.

FIND AND EDIT.	ARCAHAIVE	DOOR FA	N TEST (ATA																x
				ADD,	EDIT,	DELET	TE AF	CH)	AIVED	PRO	JECT	S A1	г тні	E DA	TAB.	ASE				
LOOKUP	LOOKUP IESI																			
DUILDING NAME (DUILDING NAME (PREJECT NR) BOOM NAME (SUD NR) DUILDING & ROOM STANDARD CLEWN //GEVT STE ELE///ITON UNIT			π	TSID	co	NTRACTOR	CU:	TOMER'S		DUILO	DING		EVEWITNESS		1657 DI		UNITICIANCE		
							VIKEX	2000 KA 🔫	PYRALIS	SERVICES	• 1	UAWCITE	misoare -	• Fire	e Cater Hunga		NTILTECY	VIKD(: 🕶		
STANDA				N UNIT	TEE CORREC		۵.	SENT UNIT	UNIT	назляс	CLASSIRIC	CATION	MIN EXT C	3 6 P	- ELA DISTRIBUTIO	N F	- CALCULA	VTED	MIKING OF NOT	
EN-15004-01_0	- 80	IG-541	-	100	- m	No Tee Co	. •	DESIG	NCK -	36	SURFA	E CLASS		33.92	1 24),5 Hi-Low		C		
S				2				112.5	. UN		O O		72	Min ROOM	20		I ROD	10	10	
	ESSURE, TI	EMPERA	TURES (T PRESSU	RE	-	_	112.5		_	- EXT	ENDED	DISCH	ARGE -	20	1 00		10 1	10
DRAFT MOVES	DRAFT MOVES STATIC PRESSURE UNIT INSIDE TEMPERATURE						а сыл	///	BIENT PRESSUR		FSSIRF	EKT DE	SCH (min)	AGENT	rquwin	UNIT	AIRCH	LANGE (VD	SROFE TEST	ATE (mm/dd/yyyy)
No Direction	-	•	Pa	19		1	oC		1051	0°	-		0		D	kg				8/19/2016
DEPRESSU	RISATION	IEST —										PRE	SSURIS	ALION	ILSI -					
LOGGING THE TES	ISD-Pmi/2 (11	7 40	WISED CALLS	RHOIF	-Pealibr (10.1)	ISO-Pmi(13.4 150	-93 (33.4)	150-94 (11	2] 150-5	5 (51 5)	15/3+P	mi/7 (11 7)	+Pralih	e (11.7	ISCl+Pmi (23.4)	ISO+P3	(334)	K0+P1 (41.6)	ISO4P5 (52 O)
Pa	10		1187.	6	10 Ocaliba	20.7	_	30.9	413		11		10 1 Olm/2	10	1	20.3		×	47	531
m3/h	2125	1	100	cm2	3148	3578		4365	5099	5	711	30	L694	278	84	2796	390	05	4606	5259
ENCLOSUR	E-PEAK PR	ESSURE	& VENT	CALCUL	ATION	,	-		,								,			,
	HOLE SETT	NG (PEAK P	PERSONAL	CALC)		AVINC DISCH	ENT (ONE	FLOW	DIRECTION			ER ER I A			- CHEM	ICAL VENT (DUAL F	FLOW] -	DTHER BR +	
	VENT+LEAK/AGE BASED ON TEST					8.5kg/c	18.91b/c	Pea	k Flow kg/s	• 17		0	cr	n2		50		0	0	cm2
NEG STRUCT STREN	ENGHT FOS STRUCT STRENSHT				INFILLY S	OVER-PRE	SSURE VE	VT				INF	REVENTS P		DHA -FI	ICIW VENT				DUFLOW PRV' PCE
250	2	50	Ра		100	ESV-1010	FXI				•		1	-	1108-80	00			•	1 💌
KEW	IARKS																			U
Dele	de Test		F	Reset For	10	A	dd Nev	v Tesl			Filit Te	sl			Vie	w Test			Close I	orm

You can lookup project at the database typing some relevant letters to the pink cell.

	FIND AND EDIT ARCAHAIV	E DOOR FAN TEST DATA			
		ADD, EDIT, DE	LETE ARCHAIVED P	ROJECTS AT THE D	DATABASE
1	ri	Ritz_Carlton Hotel Szerverterem	G4-00003	G4S Bizronságtechnikai 0	0
	LOOKUP TEST				

If you find the project you wish to work, double click to the project at the list box.

The project details appears at the form cells, than you can

Delete the selected project

You can edit any data at the form, than you can push the "EDIT TEST" button. this will save the changes, but overwrite the previous data.

The "Add New Test" button only active if you load your project directly to the form. In this case.

Push the "Reset Form button.

Fill out all the cells

Push the "Add New Test" button

The "Close Form" close the Project's Customer Form.

(8) SELECT CONTRACTOR

If you click to the C8 cell, and click the arrow at the right side of the cell, you can select the contractor, for your project.

CONTRACTOR	EDIT G4S Bizronságtechnikai Zrt.
CUSTOMER'S	Fire Eater Hungaria Kft
BUILDING	G4S Bizronságtechnikai Zrt. VIKEX 2000 Kft

If you cannot find the contractor you wish to use, click to the "EDIT" button at the same row to add a new contractor.

- •At the pop up form, click to "Reset Form" button.
- •Fill out the input cells (at list the first 4 data need to fill to be able to save your new contractor)
- •Push the "ADD CONTRACTOR" button to save the new data.

If you repeat the above selection process, the new contractor can be selected.

You can manage your Contractor database as follows:

- •Choose title at the "SELECT SEARCH FIELD"
- •Type a few relevant letter to the "SEARCHING CRITERIA" cell,
- •Push the "GET CONTRACTOR" button.
- •Double click to the contractor you wish to work with. Than:

Contractor Database of the DFT 201	5 Door Fan Test Program						
	CONTRACTO	OR'S DATABASE					
SELECT SEARCH FIELD	SEARCHING CRITERIA						
Company_Name	v GE	GET CONTRACTOR VIEW DTA CLEAR					
Company Name Addres	s Zip&Town Cou	Intry First Name Family Name Pho	one Number Email				
VIKEX 2000 Kft Teleki u	157/C H-1184 Budapest Hur	ngary Viktoria Babos 362	209614116 info@vikex.hu				
<u> </u>))				
COMPANY NAME	CONTRACTOR'S ADDRESS	CONTRACTOR'S ZIP NR & TOWN	CONTRACTOR'S COUNTRY				
VIKEX 2000 Kft	Teleki u 57/C	H-1184 Budapest	Hungary				
CONTACT PERSON'S FIRST NAME	CONTACT PERSON'S FAMILY NAME	PHONE NUMBER	E-MAIL ADDRESS				
Viktoria	Babos	36209614116	info@vikex.hu				
DELETE CONTRACTOR RESE	T FORM ADD CONTRACTO	R EDIT CONTRACTOR	CLOSE FORM				

- •You can "DELETE CONTRACTOR"
- •You can modify any cell than update your database to click to the "EDIT CONTRACTOR" button

- •If you "RESET FORM" you can add a new data and then ADD as a new.
- •The "CLEAR ALL" can be used before a new "SEARCH"
- •The "CLOSE FORM" close the Customer Form.

9 SELECT CUSTOMER

If you click to the C9 cell, and click the arrow at the right side of the cell, you can select the customer, for your project.

CUSTOMER'S	
BUILDING	0 Fire Eater Hungaria Kft
EYEWITNESS	SambillelM Immobilien Kft VIKEX 2000 Kft

If you cannot find the customer you wish to use, click to the "EDIT" button at the same row to add a new customer.

- •At the pop up form, click to "Reset Form" button.
- •Fill out the input cells (at list the first 4 data need to fill to save your new customer)
- •Push the "ADD CUSTOMER" button to save the new data.

If you repeat the above selection process, the new customer can be selected.

You can manage your Customer database as follows:

- •Choose title at the "SELECT SEARCH FIELD"
- •Type a few relevant letter to the "SEARCHING CRITERIA" cell,
- •Push the "GET CUSTOMER" button.
- •Double click to the customer you wish to work with.

Customer Database of the DFT 201	stomer Database of the DFT 2015 Door Fan Test Program								
	CUSTOM	IER'S DATA	BASE						
SELECT SEARCH FIELD	SEARCHING CRITERIA		_						
Company_Name	f	GET CUSTOMER	VIEW DAT	A CLEAR ALL					
Company_Name Addre	ss Zip&Town	Country First_Name	Family_Name Phone	Number Email					
Fire Eater Hungaria Kft Teleki	i u 57/C H-1184 Budapest	Hungary Istvan Gyula	Veisse 362093	28773 iv@fire-eater.com					
· (>					
CUSTOMER'S COMPANY	CUSTOMER'S ADDRESS	CUSTOMER'S ZIP	NR & TOWN	CUSTOMER'S COUNTRY					
Fire Eater Hungaria Kft	Teleki u 57/C	H-1184 Budapes	it	Hungary					
CONTACT PERSON'S FIRST NAME	CONTACT PERSON'S FAMILY N	IAME PHONE NUMBER		E-MAIL ADDRESS					
lstvan Gyula	Veisse	36209328773	1	iv@fire-eater.com					
DELETE CUSTOMER RESE	T FORM ADD CUSTO	MER EDIT C	USTOMER	CLOSE FORM					

•You can "DELETE CUSTOMER"

- •You can modify any cell than update your database to click to the "EDIT CUSTOMER" button
- •If you "RESET FORM" you can add a new data and ADD.
- •The "CLEAR ALL" can be used before a new "SEARCH"

The "CLOSE FORM" close the Form.

10 SELECT BUILDING

If you click to the C10 cell, and click the arrow at the right side of the cell, you can select the BUILDING, for yur project.

BUILDING	EDIT 0
EYEWITNESS	0 Exim Irodaház
TEST DEVICES'	Fire Eater Hungaria Kft Vikex 2000 Kft

If you cannot find the BUILDING you wish to use, click to the "EDIT" button at the same row to add a new BUILDING.

•At the pop up form, click to "Reset Form" button.

•Fill out the input cells (at list the first 4 data need to fill to save your new BUILDING)

•Push the "ADD BUILDING" button to save the new data.

If you repeat the above selection process, the new BUILDING can be selected.

You can manage your BUILDING database as follows:

- •Choose title at the "SELECT SEARCH FIELD"
- •Type a few relevant letter to the "SEARCHING CRITERIA" cell,
- •Push the "GET BUILDING" button.
- •Double click to the BUILDING you wish to work with.

Building Database of the DFT 2015 Door Fan Test Program				
	BUILDING	'S DATABASE		
SELECT SEARCH FIELD	SEARCHING CRITERIA			
Company_Name	•	GET BUILDING VIE	W DATA CLEAR ALL	
Company_Name Exim Irodaház	Address Zip&Town Percu 8 H-1036 Budges	Country First_Name Family_Namest Hungary	ne Phone_Numbe Email	
Fire Eater Hungaria Kft Vikex 2000 Kft	Teleki u 57/C H-1184 Budapa Taleki u 57/C H-1184 Budapa	est Hungary István Veisse est Hungary István Veisse	36 20 9 328 77: iv@fire-eater.hu 36 1 294 5512 info@vikex.hu	
•			•	
BUILDING'S COMPANY	BUILDING'S ADDRESS	BUILDING'S ZIP NUMBER & TOWN	ÉPÜLET ORSZÁG	
Exim Irodaház	Perc u 8	H-1036 Budapest	Hungary 👻	
CONTACT PERSON'S FIRST NAME	CONTACT PERSON'S FAMILY NAME	PHONE NUMBER	E-MAIL ADDRESS	
DELETE BUILDING RESET FORM ADD BUILDING EDIT BUILDING CLOSE FORM				

- •You can "DELETE BUILDING"
- •You can modify any cell than update your database to click to the "EDIT BUILDING" button
- •If you "RESET FORM" you can add a new data and ADD.
- •The "CLEAR ALL" can be used before a new "SEARCH"

The "CLOSE FORM" close the Form.

(1) SELECT EYE WITTNESS

If you click to the C11 cell, and click the arrow at the right side of the cell, you can select the EYE WITTNESS .for your project

EYEWITNESS	Е ОТ 0 🛫
TEST DEVICES'	0 Fire Eater Hungaria Kft
UNIT	Vikex 2000 Kft

If you cannot find the EYE WITTNESS you wish to use, click to the "EDIT" button at the same row to add a new EYE WITTNESS.

•Click to "Reset Form" button.

- •Fill out the input cells (at list the first 4 data need to fill to save your new EYE WITTNESS)
- •Push the "ADD EYE WITTNESS" button to save the new data.

If you repeat the above selection process, the new EYE WITTNESS can be selected.

You can manage your EYE WITTNESS database as follows:

- •Choose title at the "SELECT SEARCH FIELD"
- •Type a few relevant letter to the "SEARCHING CRITERIA" cell,
- •Push the "GET EYE WITTNESS" button.
- •Double click to the EYE WITTNESS you wish to work with.

Witness Database of the DFT 2015 D	oor Fan Test Program		×
	EYE WITTNE	SS' DATABASE	
SELECT SEARCH FIELD	SEARCHING CRITERIA V GE	T WITNESS VIEW DA	TABASE CLEAR ALL
Company_Name Address	s Zip&Town Cour	try First_Name Family_Name I	Phone_Number Email
4			
EYE WITTNESS' COMPANY	WITNESS' COMPANY ADDRESS	WITTNESS' ZIP NR. & TOWN	WITNESS' COUNTRY
Vikex 2000 Kft	000 Kft Teleki u 57/C		Hungary 🔻
CONTACT PERSON'S FIRST NAME CONTACT PERSON'S FAMILY NAME PHONE NUMBER E-MAIL ADDRESS		E-MAIL ADDRESS	
Viktoria	Babos	36209614116	info@vikex.hu
DELETE WITTNESS RESET	FORM ADD WITTNESS	EDIT WITTNESS	CLOSE FORM

- •You can "DELETE EYE WITTNESS"
- •You can modify any cell than update your database to click to the "EDIT EYE WITTNESS" button
- •If you "RESET FORM" you can add a new data and ADD.
- •The "CLEAR ALL" can be used before a new "SEARCH"

The "CLOSE FORM" close the Form.

12 SELECT EQUIPMENT (TEST DEVICES')

The contractor, customer, building, eye witness are quite similar. A bit more attention need to add and edit data at the equipment (test devices) database.

If you click to the C12 cell, and click the arrow at the right side of the cell, you can select the EQUIPMENT.

TEST DEVICES'	EDIT	INFILTEC VIKEX 2
UNIT		TEC VIKEX 1
APPLICABLE STAND	ARD INFIL	TEC VIKEX 2

If you cannot find the EQUIPMENT you wish to use, click to the "EDIT" button at the same row to add a new EQUIPMENT.

•Click to "Reset Form" button.

•Fill out the input cells (at list the first 4 data need to fill to save your new EQUIPMENT)

Before you add to the database a new equipment please prepare your fan and micro-manometer calibration certificate, supplied by the manufacturer. In case of INFILTEC blower door system the following data will need.

E3-DM4 blower system

Inflitec, 108 South Delphine Ave., PO Box 1125, V	007, Falls Church, VA 22 Naynesboro, VA 22980	041 phone: (703) 820-7696 phone: (540) 943-2776
BLOWER DOOR CALIBRATION MEAS Blower Door Manufacturer: Infilter	SUREMENTS - NFP	2001 1994 CALIBRATION
Model and Serial No E3 / DM4 2136005 / 271 Calibration by: micromanometer and wall-mounted fi	204 2	Date: 6/5/2012 By:David Brubaker
BLOWER DOOR CALL	IBRATION IN TEST CH	MBER
Certi	El made a de la	
5/12/97 Version Serial: Date of Manufacture: Calibration Date: Calibrated by: Calibration location:	2136005 May-12 6/5/2012 David Bruk Infiltec H	lation Spreadsheet Daker Factory, Waynesboro, VA

Equipment Database of the DFT 20	15 Door Fan Test Progra	m	a STAL IN LODG Budger	 aduption 	X
	TES	T DEVICES' D	ATABASE		
SELECT SEARCH FIELD	SEARCHING CRITERIA	GET TEST DEVIC	CE VIEW DATA	CLEAR	ALL
MANUFACTURER OF TEST DEVICES	BLOWER FAN TYPE'S	FAN SERIAL NUMBER'S	CALIBRATION DATE (dd/mm/yyyy)	CALIBR TEMPERATURE	UNIT'S
INFILIEC VIKEA S	MANOMETER'S TYPE	MANOMETER SERIAL NR	CALIBRATION DATE (dd/mm/yyyy)	CALIBRATION PRESSURE	UNIT'S
	DM 4	271204	6/5/2012	28.3	inHg 🔻
THERMOMETER'S MANUFACTURER	THERMOMETER TYPE	THERMOMETER SERIAL NR.	CALIBRATION DATE (dd/mm/yyyy)		
DELETE TEST DEVICE	RESET FORM	ADD NEW DEVICE	EDIT TEST DEVICE	CLOSE FOR	M

•Push the "ADD EQUIPMENT" button to save the new data.

If you repeat the above selection process, the new EQUIPMENT can be selected. You can manage your EQUIPMENT database as follows:

- •Choose title at the "SELECT SEARCH FIELD"
- •Type a few relevant letter to the "SEARCHING CRITERIA" cell,
- •Push the "GET EQUIPMENT" button.
- •Double click to the EQUIPMENT you wish to work with.

Equipment Database of the DFT 201	5 Door Fan Test Program	n tere	N = STOL N LINE Budge		X
	TES	T DEVICES'	DATABASE		
SELECT SEARCH FIELD	SEARCHING CRITERIA	GET TEST DEV		CLEAR #	ALL .
Fan Maker Fan Type F Ser Nr INFILTEC VIKEX1 E3 247543 INFILTEC VIKEX2 E3 247543 INFILTEC VIKEX3 E3 2136005	Fan Calibr Manom Ty 16/03/2015 DM4 24/04/2015 DM4 5 05/06/2012 DM 4	pe MSerNr MCalibr 125354 24/04/2016 125354 24/04/2015 271204 05/06/2012	Thermo M Tyr Th Type Th Ser Nr HAMA HAMA n/a HAMA HAMA HAMA T100 111111	Th Calibr F Calibr T Unit' 06/11/201 67.00 oF 24/04/201 67.00 oF 21/05/201 66.00 oF	T F Calibr F 28.70 28.70 28.30
<u> </u>					•
MANUFACTURER OF TEST DEVICES	BLOWER FAN TYPE'S	FAN SERIAL NUMBER'S	CALIBRATION DATE (dd/mm/yyyy)	CALIBR TEMPERATURE	UNIT'S
INFILTEC VIKEX 2	В	247543	24/04/2015	67	oF 💌
	MANOMETER'S TYPE	MANOMETER SERIAL NR	CALIBRATION DATE (dd/mm/yyyy)	CALIBRATION PRESSURE	UNIT'S
	DM4	125354	24/04/2015	28.7	inHg 🔻
THERMOMETER'S MANUFACTURER	THERMOMETER TYPE	THERMOMETER SERIAL NR.	CALIBRATION DATE (dd/mm/yyyy)		
НАМА	HAMA		24/04/2015		
DELETE TEST DEVICE	RESET FORM	ADD NEW DEVICE	EDIT TEST DEVICE	CLOSE FOR	М

- •You can "DELETE EQUIPMENT"
- •You can modify any cell than update your database to click to the "EDIT EQUIPMENT" button
- •If you "RESET FORM" you can add a new data and ADD.
- •The "CLEAR ALL" can be used before a new "SEARCH"

The "CLOSE FORM" close the Form.

13 SELECT UNIT TYPE

Click to the C13 cell, and click the arrow at the right side of the cell, you can select the following units.

		1
APPLICABLE STANDARD	METRIC UNITS	L
	IMPERIAL UNITS	

•METRIC (SI) UNITS

Length:	m
Area:	m ² & cm ²
Volume:	m ³
Flow:	m³/h
Pressure:	Ра
Temperatu	ure: ⁰C
Weight:	kg
•IMPERIAL (U	JSA) UNITS
Length:	ft
Area:	ft ² & in ²

Area:	ft ² & in ²
Volume:	ft ³
Flow:	cfm
Pressure:	Pa
Temperature:	٥F
Weight:	lb

•You can change unit back and forth if you click to the change button.

(14) SELECT STANDARD

Click to the C14 cell, and click the arrow at the right side of the cell, you can select the following units.

APPLICABLE STANDARD	EN-15004-01_08	HO T
MIXING OR NOT DURING HOLD	EN-15004-01_08	
	prEN-15004-01_15	
DATE dd/mm/yyyy	ISO-14520-01_06	
	ISO-14520-01_15	=
	VdS_2380_2381	
PRESSURE VENTING	CEA_4008_4045	
	NFPA-2001_2015	
EVALUATION OF DO	ISO-6183_CO2	Ŧ

The available standards:

- •EN-15004-01_08
- •prEN-15004-01_15
- •ISO-14520-01_06
- •ISO-14520-01_15
- •VdS_2380_2381
- •CEA_4008_4045
- •NFPA-2001_2015
- •ISO-6183_CO2
- •VdS-2093_CO2
- •CEA-4007_CO2
- •NFPA-12_CO2
- •NFPA-12A_HALON

Be aware the selection of the standards influence the input data and the calculation results could be significantly different, due to the different formulas of the standards.

(B) SELECT MIXING CONDITIONS

Click to the C15 cell, and click the arrow at the right side of the cell, you can select the following units.

MIXING OR NOT DURING HOLD		
DATE dd/mm/yyyy	CONT MIXING	
	NO CONT MIXING	
DDECCLIDE VENITING	CAN'T JUDGE MIX	
PRESSURE VENTING CALCULATIONS		

•CONT MIXING means there are continuous mixing during the hold time.

The relevant printing option is **PRINT MIXING RIPORT**

•NO CONT MIXING means there are no continuous mixing during the hold time.

The relevant printing options

PRINT NOMIX RIPORT

CANT JUDGE MIX (or not during hold time)

If you cannot judge weather mixing or not during the hold time, you should make hold time calculation and the worst data shall be comply the requirements.

The relevant printing option.

PRINT NOMIX RIPORT

16 TEST DATE

Click to the C 16 "yellow" cell and write the test date. At the English Excel, we used the following format dd/mm/yyyy. Please check at your Excel the proper date format. No data validation added to check the proper date formula.

GENERAL INPUT DATA

CLEAN AGENT	FK-5-1-12	NOVEC-1230, SAPHIRE
PFIRE HAZARD CLASS	HIGHER HAZARD A	CLASS C
3 N/A at ISO, EN, VDS	0	Factor: 1
O AMBIENT PRESSURE UNIT	Hecto Pa	
SAMBIENT PRESSURE VALUE	1015.00	Hecto Pa
O UNIT OF CLEAN AGENT QUANTITY	AGENT MASS Q	
agent quantity (q= value)	72.00	kg
3 MIN EXTINGUISING CONCENTRATION (C %)	4.76	%
9 F= "LOWER LEAKAGE RATIO"	F=0,15 pe>pa	
HOLE'S CALC. DISTRIB. (F= Calculated set)	0.00	
	20.00	oC
	-1.00	oC

1CLEAN AGENT

Click to the F5 cell, and click the arrow at the right side of the cell, you can select the following Clean Agent's.

CLEAN AGENT	FK-5-1-12	NC T
FIRE HAZARD CLASS	CF3I FK-5-1-12	*
TEE FACTO	HCFC Blend A HCFC-124	Ξ
AMBIENT PRESSURE UN	HFC-125 HFC-227ea	
AMBIENT PRESSURE VA	HFC-23 HFC-236fa	-

STANDARD NAME	BUSINESS	ISO 14520	EN 15004	NFPA 2001	VDS/CEA
CF3I	CF3I	X			
FK-5-1-12	NOVEC-1230, SAPHIRE	X	X	X	X
HCFC Blend A	NAFS III	X	X	X	
HCFC-124	HFC-124			X	
HFC-125	FE 25	X	X	X	
HFC-227ea	FM-200	X	X	X	X
HFC-23	FE-13	X	X	X	
HFC-236fa	HFC-236fa			X	
FIC-1311	FIC-1311			X	
HFC Blend B	HFC Blend B			X	
IG-01	ARGON	X	X	X	X
IG-100 (N2)	NIROGEN	X	X	X	X
IG-55	ARGONITE, PROINERT	X	X	X	X
IG-541	INERGEN	X	X	X	X
CO2	CO2	ISO 6183		NFPA 12	VDS 2093 CEA 4007
Halon-1301	HALON			NFPA 12/A	

The available standard Clean Agents:

Listen to fit Your Standard and Clean Agent selection.

2 FIRE HAZARD CLASS

Click to the F6 cell, and click the arrow at the right side of the cell, you can select the following Hazard Class.

			ISO / FN / VDS / CEA	NFPA
FIRE HAZARD CLASS	HIGHER HAZARD A	CLASS C	SURFACE CLASS A	CLASS A
TEE FACTO	SURFACE CLASS A	Factor: 1	HIGHER HAZARD A	CLASS C
	CLASS B		CLASS B	CLASS B

3N/A at ISO, EN, VDS

Not need to fill the F7 cell in case of ISO, EN, VdS and CEA standards. In these standard selection the the cells look like below. "No Tee Corr" can be selected as well.

```
N/A at ISO, EN, VDS No Tee Corr Factor: 1
```

The TEE correction only applicable at NFPA 2001 test. If NFPA standard selected the cells turn on see below.

TEE FACTO	R (NFPA) No Tee Corr	-
AMBIENT PRESSURE UN	No Tee Corr 5	•
AMBIENT PRESSURE VA	6 7	Ξ
UNIT OF CLEAN AGENT	8 9	
AGENT QUANTITY (Q=)	10 11	Ŧ

In NFPA standard case you can select the number of TEE to set the correction factor, according to the standard.

4 AMBIENT PRESSURE UNIT

Click to the F8 cell and click the arrow at the right side of the cell several unit can be selected for the ambient pressure of the site. The ambient pressure's unit selection independent from the unit setting of the program at cell C13 and the unit change option.

AMBIENT PRESSURE UN	ΙΙΤ	Hecto Pa 🚽]
AMBIENT PRESSURE VA	bar mbar		Hecto Pa
UNIT OF CLEAN AGENT QUANTITY	Pa mmHg		
AGENT QUANTITY (Q=)	inHg inAq Hecto	Da	kg
	TIECCO	ra	

The ambient pressure important part of the pressure-flow calculation formula's k1 value in case of the ISO, EN, VdS, CEA standards.

5AMBIENT PRESSURE VALUE

Add the value of the ambient pressure at the above selected unit to the F9 "yellow" cell.

6 UNIT OF CLEAN AGENT QUANTITY

Click to the F10 cell and click the arrow at the right side of the cell, where you can set the unit of the agent value.



- •The "AGENT MASS Q" means the total weight of the installed Clean Agent. This is the right selection in case of Door Fan Test. The program calculates the initial concentration from the summa Agent Weight's. At the same rows at the right end you can see the advised minimum design concentration, according the hazard class, if the standard value available.
- •The "DESIGN C%" means, the initial Agent concertation's after discharge. This value need to be higher than the minimum design concentration, specified at the standard or supplied by the manufacturer. If you select "DESIGN C%" the program calculate the agent mass.

7AGENT QUANTITY (Q= VALUE)

Add the relevant "AGENT QUANTITY" to the F11 "yellow" cell at the unit selected above.

- •If the set unit is "AGENT MASS Q" the value shall be kg (metric set) or lb (imperial set)
- •If the set unit is "DESIGN C%" the value shall be in %.

The next cell shows the unit according to your setting and selection.

8 MIN EXTINGUISING CONCENTRATION (C %)

Define the minimum extinguishing concentration and write to the F12 "yellow" cell. The minimum extinguishing concentration at all installed standards defined as 85% of the minimum design concentration.

If the minimum design concentration available at the standard you can see the advised minimum extinguishing concentration at the same row right columns.

If the minimum design concentration missing at the standard the advised value calculated from the initial concentration.

The minimum extinguishing concentration is important part of all the "continuous mixing during hold time" calculation and the no mixing calculation of the ISO, EN, VdS, CEA calculations!

The test engineer responsibility to define the proper value of the minimum extinguishing concentration!

9F= "LOWER LEAKAGE RATIO"

Click to the F13 cell and click the arrow at the right side of the cell to select the F value, called "LOWER LEAKAGE RATIO".

F= "LOWER LEAKAGE RATIO"		F=0,15 ре>ра 🖵				
HOLE'S CALC. DISTRIB.	F=0,15 ρe>pa E=0.5 Hi=Low					
ROOM INSIDE TEMPRA	F=0,85 pe <pa< th=""></pa<>					
	r=Calo	ulated				

The meaning of F is the distribution of the holes based on the size and the heights of the. Quite difficult to define the the proper value.

"F=0,5 Hi=Low" means, the 50% of the holes located upper part of the room and 50% of the holes located at the lower part of the room. This is the worst case scenario.

All the standard advice to use this setting for the first evaluation of the hold time the "F=0,5 Hi=Low" setting.

"F=0,15 pe>pa" means, the Clean Agent density higher than the air density. This is the case for nearly the all Clean Agent, except the Nitrogen N₂."0,15" is the lower applicable ratio can be use if no hole at lower part of the room.

"F=0,85 pe<pa" means, the Clean Agent density lower than the air density. This trough only the Nitrogen N₂. "0,85" is the higher applicable ratio, can be used if no holes at the upper part of the room.

ISO, EN, VdS and CEA standards allow a second hold time evaluation with the calculated F value. For the method and calculation of the F value, go to see the standard. Calculate the F value, select at this cell the

"F=Calculated" than write the correct F value to the next yellow cell.

The NFPA have different methods to define F values, for details see the NFPA 2001 standard.

The "F=0,15 pe>pa" and the "F=0,85 pe<pa" setting results the longest hold time if you are sure about the room conditions fit to use settings.

The best, secure and conservative solution if the hold time acceptable with the "F=0,5 Hi=Low" selection!

(DHOLE'S CALC. DISTRIB. (F= Calculated set)

If you set at the above cell **"F=Calculated"** add to the calculated value to the F14 "yellow" cell. this value shall be between 0,5 and 0,15 if Clean Agent density > Air Densty or between 0,5 and 0,85 if the Agent density < Air Densty

1ROOM INSIDE TEMPRATURE

Write to the F15 "yellow" cell the room temperature.

DAMBIENT TEMPERATURE

Write to the F16 "yellow" cell the outside (ambient) temperature.

ROOM DIMENSIONS & PROJECT DATA

Due to the different data requirement of the VdS and CEA standards some input fields depends on the standard setting.

ROOM DIMENSIONS & PROJECT DATA			CALCULATED PROJECT DATA				
N/A at ISO, EN, NFPA	0.00	m	AGENT AIR MIX MASS (Pmi)	29.10	Ра		
N/A at ISO, EN, NFPA	0.00	m	ROOM FLOOR AREA	0.00	m2		
① ROOM HEIGHT (Ho)	4.00	m	ROOM'S COVERED SURFACE (VDS&CEA!, =AV)	0.00	m2		
(2) HAZARD HEIGHT (H)	2.00 m		HAZARD HEIGHT (H, ISO:He)	2.80	m		
N/A at ISO, EN, NFPA	0.00	m3	AGENT QUANTITY (Q= VALUE)	72.00	kg		
③ UNCLOSABLE OPENING (VDS & CEA!, =A0)	0.00	cm2	ADVISED MIN DESIGN C%, IF SANDARD VALUE GIVEN	5.60	%		
N/A at ISO, EN, NFPA	0.00	m3	ENCLOSURE NET VOLUME (V, VDS&CEA!, =Vv)	83.75	m3		
④ NET ROOM VOLUME (ISO, EN, NFPA!, =V)	83.75	m3	AVISED MIN EXTINGUISING C%	4.76	%		
(5) MIN ROOM TEMPERATURA	15.00	oC	AGENT INITIAL C% (Ci)	5.72	%		
6 ALTITUDE	100.00	m	AGENT AIR MIX MASS (Pmi)	29.10	Ра		
⑦ HOLD TIME (t)	10.00	min	HOLD TIME (NO MIX/MIX)	10.71	6.12		
(8) FLOODING TIME (td)	10.00	sec	DISCHARGE TIME OK?	10.00	sec		

ISO-EN-NFPA set of input data

(1) ROOM HEIGHT (Ho)

Measure and write to the J7 "yellow" cell the total room height.

(2) HAZARD HEIGHT (H)

Define the hazard height to the J8 "yellow" cell, normally the highest point of the room where re-ignition can be happened.

At the same row you can see the calculated hazard height:

- •NFPA 2001 standard use the so called "sharp interface method" whereas the H does not differ from the figure you specified.
- •ISO, EN, VdS, CEA standard use the so called "wide interface method" where the equivalent hazard height He is calculated. (Resulting significantly shorter hold time than the NFPA 2001 calculation). The new ISO 14520:2015 correct this He value, so this value can be different standard by standard and the no mix hold time different as well due to the H value is part of the no mix hold time calculation..

③ UNCLOSABLE OPENING

If in the tested room any not closable opening exist, you can add the area to the J10 "yellow" cell.

(4) NET ROOM VOLUME (ISO, EN, NFPA !, =V)

You should measure and calculate the NET volume of the room (to reach the net volume you should deduct from the volume the spaces, structures where to the Clean Agent cannot flow in (like columns).

Write the net volume to the J10 "yellow" cell.

VdS and CEA working with calculated volume.

(5) MIN ROOM TEMPERATURA

Define the minimum room temperature where the fire protection should work and add to the J12 "yellow" cell.

6 ALTITUDE

Write to the J13 "yellow" cell the elevation above the see level to set the elevation correction factor, if need to apply.

7 HOLD TIME (t)

During the Hold Time the room shall be protected from any fire or re-ignition of the fire.

Write the required Hold Time to the J14 "yellow" cell. Normally the minimum Hold Time according to the standard is 10 min, however the designer or the Authority Having Jurisdiction (AJH) could request longer Hold Time.

8 FLOODING TIME (td)

The maximum allowable flooding time or discharge time set for at the standard. Chemical Agent flooding time can be lower than 10 sec, however in case of Inert Agent the flooding time shall be lower than 60 sec (EN 15004:2008, ISO 14520:2006), 120 sec (NFPA 2001:2015. ISO 14520:2015, VdS and CEA)

Write the calculated (best practice is based on the hydraulic calculation) flooding time to the J15 "yellow" cell.

You can see at the same row, at the right weather the flooding time you specified is within the standard limit. Changes on the Inert EN 15004 new edition is expected, but the new edition not yet published.

VdS, CEA set of input data

ROOM DIMENSIONS & PROJECT DATA				
ROOM LENGHT (VDS&CEA!, =L)	0.00	m		
ROOM WIDHT (VDS&CEA!, =W)	0.00	m		
ROOM HEIGHT (Ho)	4.00	m		
HAZARD HEIGHT (H) 2.00 m				
DEDUCTABLE VOLUME (VDS&CEA!, =VG)	0.00	m3		
UNCLOSABLE OPENING 0.00				
AIR EXCHANGE DURING FLOODING (VDS&CEA!, =VZ)	0.00	m3		

CALCULATED PROJECT DATA					
AGENT AIR MIX MASS (Pmi)	29.10	Ра			
ROOM FLOOR AREA	0.00	m2			
ROOM'S COVERED SURFACE (VDS&CEA!, =AV)	0.00	m2			
HAZARD HEIGHT (H, ISO:He)	2.78	m			
AGENT QUANTITY (Q= VALUE)	72.00	kg			
ADVISED MIN DESIGN C%, IF SANDARD VALUE GIVEN	5.60	%			
ENCLOSURE NET VOLUME (V, VDS&CEA!, =Vv)	83.75	m3			

1 ROOM LENGHT (VDS&CEA!, =L)

Define and write to the J5 "yellow" call the value

2 ROOM WIDHT (VDS&CEA!, =W)

Define and write to the J6 "yellow" call the value

The program calculates the floor area, you can see at the right column.

ROOM HEIGHT (Ho)

Identical with the ISO, EN input field

HAZARD HEIGHT (H)

Identical with the ISO, EN input field

3 DEDUCTABLE VOLUME (VDS&CEA!, =VG)

Define and write to the J9 "yellow" call the value. Closed volume from the Clean Agent within the tested enclosure.

UNCLOSABLE OPENING

Identical with the ISO, EN input field

The program calculate the net volume based on the above data input. The calculated net volume can be seen at the right column.

If you have a not standard shaped room, we advise to convert into a standard shaped volume, as the VdS and CEA calculation need calculated data as floor area and total covered surface, etc.

4 AIR EXCHANGE DURING FLOODING (VDS&CEA!, =VZ)

Define the air exchange during flooding and write to the J11 "yellow" cell

PRESSURE VENTING CALCULATIONS

Click to the + sign next ti the title to open the pressure vent section.

÷	PRESSURE VENTING CALCULATIONS											
-	DISCHARGE PEAK (INERT AGENT)	Peak Flow Rate	PEAK GAS FLOW RATIO / PEAK FLOW: 7.2 (kg/sec)	1.00		NR OF PRESSURE VENT	1	PCE	WC DN	OVERPRESSUR DIRECTION (+vePE)	HTI XING	OVERPRESSUR DIRECTION (+vePE)
		SHX-UN-500	POS STRUCT STRENGHT (+ve EPL)	250	Pa	PRV OTHER, ADD (+ FVA)	0.00	cm2	D ROC	18	W, W US MI	15
	DUAL-FLOW VENT EDIT	DUX-300	NEG STRUCT STRENGHT (- veERL)	250	Pa	PRV OTHER, ADD (- FVA)	0.00	cm2	NNDAR THOU	DEPRESSION DIRECTION (-vePE)	IY ROC TINUO	DEPRESSION DIRECTION (-vePE)
	HOLE SETTING (PEAK PRESSURE CALC)	VENT + LEAKAGE BASED ON TEST	VENT EFFICIENCY (%)	100	%	RELATIVE HUMIDITY RH%	50.00	%	ST/ WI	7	ANCON	9

Basic setting of pressure venting calculation



1 DISCHARGE PEAK (INERT AGENT)

Click to the C18 cell, and click the arrow at the right side of the cell, you can select the peak flow setting.

DISCHARGE PEAK (INERT AGEN	T) Peak Flow Rate
OVER-PRESSURE VENT	Peak Flow Rate Peak Flow kg/sec
DUAL-FLOW VENT	Peak Flow lb/sec

• "Peak Flow Rate" means how much higher the peak flow of the average flow.

If you have inert agent you can use the peak figure from the hydraulic calculation, like VdS graph.

If you have a constant flow valve you can use number 1 as peak.

If you have a Chemical Agent you can use number 1 as well.

- •"Peak Flow kg/sec" you can see this figure at the hydraulic calculation and use the figure at the next F18 "yellow" cell.
- "Peak Flow lb/sec" you can see this figure at the hydraulic calculation and use the figure at the next F18 "yellow cell.

(2) OVER-PRESSURE VENT

If you click to the C19 cell, and click the arrow at the right side of the cell, you can select the Overpressure Vent, for your project.



If you cannot find the Overpressure Vent you wish to use, click to the "EDIT" button at the same row to add a new Overpressure Vent.

- •At the pop up form, click to "Reset Form" button.
- •Fill out the input cells (at list the first 4 data need to fill to be able to save your new Overpressure Vent)

•Push the "ADD OVERPRESSURE VENT" button to save the new data.

If you repeat the above selection process, the new Overpressure Vent can be selected.

You can manage your Overpressure Vent database as follows:

•Choose title at the "SELECT SEARCH FIELD"

•Type a few relevant letter to the "SEARCHING CRITERIA" cell,

•Push the "GET OVERPRESSURE VENT" button.

•Double click to the Overpressure Vent you wish to work with. Than:

T PRESSURE VENT DATAE	BASE						<u> </u>
		OVER	-PRES	SURE VEN	т		
SELECT SEARCH FIELD	SEARC	HING CRITERIA					
INERT PRESSURE VENT TYPE	-		GET	INERT VENT	VIEV	V DATA	CLEAR ALL
INERT PRESSURE VENT TYPE	MANUFACTURER	INSTALLATION	UNIT	POS VENT AREA	NEG VENT AREA	EFFICIENCY @ 10	REMARKS
IGV-0505 EXT	Apreco	EXTERNAL	m2	0.163000	0.00	100	
IGV-0505 INT	Apreco	INTERNAL	m2	0.250000	0.00	100	
IGV-0707 EXT	Apreco	EXTERNAL	m2	0.319000	0.00	100	
IGV-0707 INT	Apreco	INTERNAL	m2	0.483000	0.00	100	
IGV-1010 EXT	Apreco	EXTERNAL	m2	0.650000	0.00	100	
IGV-1010 INT	Apreco	INTERNAL	m2	0.976000	0.00	100	
OTHER PRV (ADD+AREA)		N/A	m2	0.000000			
SHX-UN-1000	AFP	N/A	m2	0.850000	0.00	100	-
•							•
INERT PRESSURE VENT TYPE		MANUFACTURE	R	INSTALLATION		UNIT VEN	TAREA
IGV-0505 INT		Apreco		INTERNAL		▼ m2	•
POS VENT AREA		NEG VENT AREA		EFFICIENCY @ 100) Pa	REMARK	5
0.25		0		100			
DELETE VENT	RESET FORM	ADD DIER	T VEIIT	EDIT IN	ERT VENT		CLOSE FORM

•The database input information's:

INERT PRESSURE VENT TYPE (Advise to add to the type INT if the vent area you will add is valid for internal installation, or add EXT if the vent area is for the external installation.

Manufacturer

Installation: You can select INTERNAL, or EXTERNAL depending on the advised installation

You can set the unit of vent area as follows: m², cm², ft², in² we advise to use m².

Write the positive vent area to the cell.

Live blank the negative vent area.

You can add the efficiency in %, however the program actually does not use this figure. The efficiency should be place to the F21 "yellow" cell.

Add your remarks, if any

•You can "DELETE OVERPRESSURE VENT"

- •You can modify any cell than update your database to click to the "EDIT OVERPRESSURE VENT" button
- •If you "RESET FORM" you can add a new data and then ADD as a new.

•The "CLEAR ALL" can be used before a new "SEARCH"

•The "CLOSE FORM" close the Customer Form.

③ DUAL-FLOW VENT

If you click to the C20 cell, and click the arrow at the right side of the cell, you can select the Dual Flow Vent, for your project.



If you cannot find the Dual Flow Vent you wish to use, click to the "EDIT" button at the same row to add a new Dual Flow Vent.

- •At the pop up form, click to "Reset Form" button.
- •Fill out the input cells (at list the first 4 data need to fill to be able to save your new Dual Flow Vent)
- •Push the "ADD DUAL FLOW VENT" button to save the new data.

If you repeat the above selection process, the new Dual Flow Vent can be selected.

You can manage your Dual Flow Vent database as follows:

- •Choose title at the "SELECT SEARCH FIELD"
- •Type a few relevant letter to the "SEARCHING CRITERIA" cell,
- •Push the "GET DUAL FLOW VENT" button.
- •Double click to the Dual Flow Vent you wish to work with. Than:

AL FLOW PRESSURE VENT								×				
	DUAL-FLOW VENT											
SELECT SEARCH FIELD	▼ SEAR	CHING CRITERIA	GET D	UFLOW VENT	VIEV	V DATA	CLEAR A	LL				
DUFLOW PRESSURE VENT TYPE	MANUFACTURER	INSTALLATION	UNIT	POS VENT AREA	NEG VENT ARE	A EFFICIENCY @	10 REMARKS					
DUX-300	AFP	N/A	m2	0.0470	0.0770	100						
DUX-500	AFP	N/A	m2	0.1280	0.2120	100						
DUX-700	AFP	N/A	m2	0.2160	0.3080	100						
OTHER PRV (ADD+/-AREA)	N/A	N/A	m2	0.0000	0.0000	100						
SGV-0301EXT	Apreco	EXTERNAL	m2 m2	0.0250	0.0250	100						
SGV-0302 EVT	Apreco	EVTERNAL	m2 m2	0.0250	0.0250	100						
SGV-0303 EXT	Apreco	INTERNAL	m2	0.0350	0.0350	100		_				
•								•				
CHEMICAL DUALFLOW PRESSU	IRE VENT	MANUFACTURE	R	INSTALLATION		UNITV	ENT AREA					
<u> </u>						-		•				
POS VENT AREA		NEG VENT AREA		EFFICIENCY @ 100) Pa	REMA	RKS					
DELETE VENT	RESET FORM	ADD DUFLO	W VENT	EDIT DUF	LOW VENT		CLOSE FORM					

•The database input information's:

DUAL FLOW VENT TYPE (Advise to add to the type INT if the vent area you will add is valid for internal installation, or add EXT if the vent area is for the external installation.

Manufacturer

Installation: You can select INTERNAL, or EXTERNAL depending on the advised installation

You can set the unit of vent area as follows: m², cm², ft², in² we advise to use m².

Write the positive vent area to the cell.

Write the negative vent area to the cell.

You can add the efficiency in %, however the program actually does not use this figure. The efficiency should be place to the F21 "yellow" cell.

Add your remarks, if any

•You can "DELETE DUAL FLOW VENT"

•You can modify any cell than update your database to click to the "EDIT DUAL FLOW VENT" button

•If you "RESET FORM" you can add a new data and then ADD as a new.

•The "CLEAR ALL" can be used before a new "SEARCH"

•The "CLOSE FORM" close the Customer Form.

(4) HOLE SETTING (PEAK PRESSURE CALC)

Click to the C18 cell, and click the arrow at the right side of the cell, you can select how to intend to calculate with the holes.



- •"LEAKAGE BASED ON TEST", only use the tested (or estimated) Equivalent Leakage Area. No any vent area added.
- •"VENT + LLEAKAGE BASED ON TEST" means at the peak pressure calculation the selected vent's free vent area added to the natural leakage. Most of the cases we advise use this setting.
- •+ONLY SELECTED PRESSURE VENT" use the selected pressure vent's free vent area for the peak pressure calculation.

ADDITIONAL DATA FOR THE PRESSURE VENT CALCULATIONS

PEAK GAS FLOW RATIO / PEAK FLOW: 7.2 (kg/sec)	1.00		S NR OF PRESSURE VENT	1	PCE
POS STRUCT STRENGHT (+veEPL)	250	Ра	6 PRV OTHER, ADD (+ FVA)	0.00	cm2
3 NEG STRUCT STRENGHT (- veERL)	250	Ра	PRV OTHER, ADD (- FVA)	0.00	cm2
4 VENT EFFICIENCY (%)	100	%	8 RELATIVE HUMIDITY RH%	50.00	%

1 PEAK GAS FLOW RATIO / PEAK FLOW: 7.2 (kg/sec)

Add peak flow ratio or peak flow to the F18 "yellow" call, you can find at the title the calculated average gas flow.

2 POS STRUCT STRENGHT (+veEPL)

Add positive (overpressure direction) structural strength of the room to the F19 "yellow" cell. According to FIA advice normal gypsum carton wall is about 250 Pa, brick wall is about 500 Pa, however this information should specified by the customer.

3 NEG STRUCT STRENGHT (-veERL)

Add negative (depressurisation direction) structural strength of the room to the F20 "yellow" cell. According to FIA advice normal gypsum carton wall is about 250 Pa, brick wall is about 500 Pa, however this information should specified by the customer.

4 VENT EFFICIENCY (%)

Add vent efficiency to the F21 "yellow" cell in %. The program calculate with this efficiency. The database efficiency not yet part of the calculation.

•

5 NR OF PRESSURE VENT

Add the number of the pressure vents to the J18 "yellow" cell. Only equal sized vent can be added and multiplied by the number of vent.

6 PRV OTHER, ADD (+ FVA)

You can add the positive free vent area of other brand to the J19 "yellow" cell, however we advise to add any other brand to the database.

PRV OTHER, ADD (- FVA)

You can add the negative free vent area of other brand to the J20 "yellow" cell, however we advise to add any other brand to the database.

8 RELATIVE HUMIDITY RH%

Add the room Relative Humidity in % to the J21 cell. The relative humidity is part of the Chemical Agent's pressure vent and peak pressure calculation. If no site data available, according to the FIA guidance write 50%.

Peak Pressure Results

You can see the peak pressure result at the right side of the table. If you need to make adjustment on the vent area you can see the changes in this part of the table.



EVALUATION OF DOOR FAN TEST RESULTS WITH GRAPHS

Click to the + sign next to the title to open the pressure evaluation and graph section.

You can see the test results and graphs of the no mixing and mixing calculations.

•	EVALUATION OF DOOR FAN TEST RESULTS WITH GRAPHS											
-	STANDARD VOLUME, HOLD TIME PREDICTION, NO CONTIN MIXING	NO CONTINOUOS MIXING DURING THE HOLD TIME.		ANY SHAPE OF VOLUME, HOLD TIME CONTINOUS MIXING	CONTINOUOS MIXING DURING THE HOLD TIME.							
				Initial Ci (%)								
	⊨ ^{5.0}	HOLD TIME > 10 (min) 10.71	%	8.0	HOLD TIME > 10 (min) 6.12							
			5									
		CORELLATION DEPRESSION (R2>0,98) 1.0000	ATION	6.0	CORELLATION OVERPRESSURE (R2>0,98) 0.9983							
			Ę	4.0								
	2.0	SCALIBRATION DEPRESSURISATION < +/- 15 % -9.7%	CONCEP	2.0	CALIBRATION OVERPRESSURE < +/- 15 % 2.9%							
			Ĕ									
	0.0 0 1 2 3 4 5 6 7 8 9 10	STATIC PRESSURE : < 0,25*Pini = 0.00	AGEN	0.0 TIME (MIN) 10 1 2 3 4 5 6 7 8 9 10	STATIC PRESSURE : <+ / - 3 (Pa) 0.00							

TEST RESOULTS AT GRAPHS & EXTENDED DISCHARGE EVALUATION & PRESSURE VENTING + PEAK PRESSURE CALCULATION DURING DISCHARGE

PRESSURE vs FLOW GRAPH

•The left graph is shows the pressure vs flow curves. The test points placed at the negative and positive test graph. You can see the average curve and the average correlation at the graph.

EXTENDED DISCHARGE EVALUATION

- •The right graph help to evaluate the extended discharge.
- •Until the J34 cell (extended discharge time) is empty the curve identical with the mixing during hold time curve.
- •If you write the extended discharge time to the J34 cell, the prime evaluations (no mix, mixing) are unbaled. The hold time above the extended discharge curve show the continuous mixing hold time.
- •If the hold time is below the requirements, next to the extended discharge agent weights appears the agent quantity you shall add to reach the the required hold time.
- •If you test a room where Clean Agent installed as extended discharge, the program calculate the hold time with the added agent quantity. You can set the extended discharge time up to 60 min.
- •See the below example.

но	LD TIME WITH EXT DISCH	6.00	EXTENDED DISCHARGE TI	ME	20.00	min		
1	EXTENDED DISC	HARGE Weight's chenge	ADDITIONAL AGENT QANTITY (Advised + Agent Weight: 28	0.00	kg			
E	——— Min Ext Weight		TESTED HOLE (ELA) IN CASE OF CHEM	(cm2)				
_)o -'			NR OF PRESSURE VENT	1	PCE			
150 H			TYPE OF DUAL FLOW VENT	+FVA (cm2)	-FVA (cm2)	Vent's Nr		
WEIG	00000000000000000000000000000000000000		DUX-300	470.00	770.00	1		
AGENT			SUMMA LEAKAGE ALLOVANCE + FVA / - FVA	440.66	4379.34	(cm2)		
1	1 5 9 13 17 21 25 29 33 3	37 41 45 49 53 57 61 TIME (MIN)	PEAK OVERPRESSURE / PEAK DEPRESSION (Pa)					

To achieve 20 min hold time you need to add 28 kg (round up to 29 kg) agent discharging within the 20 min hold time.

но	LD TIME WITH EXT DISCH	20.00	EXTENDED DISCHARGE TI	ME	20.00	min		
1 *	EXTENDED DISC Agent Weight	HARGE Weight's chenge	ADDITIONAL AGENT QANTITY (Advised + Agent Weight: 0	EXT DISCH) kg ; 0 lb	XT DISCH) 29.00 g ; 0 lb			
- -	Min Ext Weight		TESTED HOLE (ELA) IN CASE OF CHEM	(cm2)				
ğ			NR OF PRESSURE VENT		1	PCE		
150 H			TYPE OF DUAL FLOW VENT	+FVA (cm2)	-FVA (cm2)	Vent's Nr		
WEIG	MEIG		DUX-300	470.00	770.00	1		
AGENT			SUMMA LEAKAGE ALLOVANCE + FVA / - FVA	440.66	4379.34	(cm2)		
	1 5 9 13 17 21 25 29 33	37 41 45 49 53 57 61 TIME (MIN)	PEAK OVERPRESSURE / PEAK DEPRESSION (Pa)					

PRESSURE VENT & PEAK PRESSURE CALCULATION

•You can see the complete pressure vent and peak pressure calculation at the right hand of the screen.

EXTENDED DISCH	ARGE TIME	20.00	min	OVER	PRESSUR	DEPRE	SSION
ADDITIONAL AGENT QAN Advised + Agent Wei	NTITY (EXT DISCH) ght: 0 kg ; 0 lb	29.00	kg	NO MIX	MIXING	NO MIX	MIXING
① TESTED HOLE (ELA) IN CA	ASE OF CHEMICAL AG	990.9	1041.2	775.7	948.2		
(2) NR OF PRESSURE VENT		1	PCE	ΝΟ ΜΙΧ	MIXING	ΝΟΜΙΧ	MIXING
③ TYPE OF DUAL FLOW VENT	+ FVA (cm2)	- FVA (cm2)	Vent's Nr	VENT AREA (cm2)			
④ DUX-300	470.00	770.00	1	470	470	770	770
⑤ SUMMA LEAKAGE ALLOVANCE + FVA / - FVA	440.66	4379.34	(cm2)	1461	1511	1546	1718
6 PEAK OVERPRESSURE / F	PEAK DEPRESSION	18	17	8	8		

(1) TESTED HOLE (ELA) IN CASE OF CHEMICAL AGENT (cm2)

The text change according to your basic selections. In this example chemical agent selected. You can see at the cells the tested (or calculated) Equivalent Leakage Area for both depression and over pressure direction and both no mix and mixing conditions.

(2) NR OF PRESSURE VENT

The number of pressure vent you set at pressure vent section appears here.

③ TYPE OF DUAL FLOW VENT

The text change according to your basic selections. In this example chemical agent was selected, therefore the proper text is DUAL FLOW VENT.

(4) DUX-300

The type of the pressure vent appears together with the free vent area.

(5) SUMMA LEAKAGE ALLOVANCE + FVA / - FVA

The summa leakage allowances is based on FIA calculation, its just for comparison how fare the calculated summa leakage from the leakage allowances.

(6) PEAK OVERPRESSURE / PEAK DEPRESSION (Pa)

You can see the negative and positive peak over pressure both in case of no mix and mixing conditions. The peak pressure is compared with the structural strength.

If the peak pressure below the structural strength, the cells are green,

if the peak pressure higher than the structural strength the cells are purple.



REMARK'S

You can add your remarks and comments to the project/test to the C42 "yellow" cell. This is the only place where to you can add your remarks will be stored and appears at the reports as well.

REPORT OF INTEGRITY MEASUREMENT TESTING: PRINTING OPTIONS

You can print different reports directly from the program. Before printing we advise to set a pdf printer and to check and file your report.

The reports based on your setting and test results. The text change automatically based on the evaluation of the test

The following printing option available:

- •PRINT FULL REPORT (both mixing and no mixing during hold time)
- PRINT NO MIX REPORT
- •PRINT MIXING REPORT
- •PRINT EXTENDED DISCHARG REPORT
- **•**PRINT SCREEN
- •PRINT VENT CALC(ULATION) REPORT
- •PRINT PRESSURE VENT RFQ (if you need quotation for the major pressure vent included at the program)

MANUAL DATA INPUT AND DISPLAY TEST POINTS

This section is about to write to the program the test points (room pressure, mass flow)

If you stay within the enclosure during the test and the blower system set accordingly, you can use absolute values as the program add properly the +/- sign, except the static pressure where you shall set the flow direction.

The test points depends on your standard settings.

TEST MAX FLOW AT 60 Pa ROOM	n Pre	I PRESSURE : 1698 (m3/h) 1 1 PCE FAN MAX FLOW (INFILTEC E3=9500) /ADD VALUE/ 2							9500	m3/h	m3/h ESTIMATED NR OF FAN NEEDED TO TWS: 1 pcs 3			s 3
AGENT AIR MIX MASS (Pmi)Pa 4		29.01	5	0.00	STATIC PRESSURE	ACCEPTANCE	ADDED C	ALIBR HOLE	6 400	cm2	ADVISED CALIB	R HOLE	7 258.2	cm2
ROOM PRESSURE (P)	P-ST/	ATIC DRAFT DIRECTION	NFPA-P1	1 -Pcalibr	NFPA-P2	N/A	N/A	N/A	1 NFPA+P1	+Pcalibr	NFPA+P2	N/A	N/A	N/A
ADVISED PRESSURE (Pa)	8	From Room	10.0	10.0	50.0				10.0	4 10.0	50.0			
CLEAR TEST DATA Pa	9	0.0 16	10.0		20.2				10.7		20.8			
💠 Fan 1 mass flow	1	7 m3/h	694.0		1033.0				917.0		1395.0			
SUM MASSELOW (O)			NFPA-Q1	-Qcalibr	NFPA-Q2	N/A	N/A	N/A	NFPA+Q1	+Qcalibr	NFPA-Q2	N/A	N/A	N/A
(m3/h)	1	8 m3/h	694.0	0.0	1033.0	0.0	0.0	0.0	917.0	0.0	1395.0	0.0	0.0	0.0
EXPORT DATA TO EXCEL			ACCEPTANCE OF	NO CALIBR	"NEG PRESS" TEST POINTS CORFLICATION	1.0000	HOLD TIME (NO	18.46	ACCEPTANCE OF POS	NO CALIBR	"POS P" POINTS CORFLICATION	1.0000	HOLD TIME (CONTIN MIX)	6.19

NFPA 2001 TEST POINTS (MANUAL INPUT)

- 1. The program calculates and show the expected maximum mass flow need to reach the maximum room pressure.
- 2.You can add to the yellow cell the maximum flow of your blower fan. At INFILTEC E3 fan case the value is 9500 m3/h.
- 3. The program calculates the number of blower fan need to accomplish the test. If you need more than 1 fan push the + button to open 4 more rows for the additional fans. If you work with more than one fan, the room pressure is the

average, the mass flows add together. The program automatically sum up the fan flows at the nr. 18 row.

- 4.The program calculate and shows the weight of the initial agent air mix, after discharge. In the case of single point test (NFPA 12/A HALON). The P1 point room pressure should be around this figure.
- 5.After you write the static pressure to the nr. 9 cell, this cell shows the acceptance of the static pressure.
- 6.If you intend to make site calibration test, after the test of the first -P1/Q1 points the nr. 7 cell, shows the advised hole to open to the calibration test. Open an area close to the adviced and write to the nr 6 cell the opened hole's area.
- 7. Advised calibration hole appears here.
- 8.Set the direction of the static pressure, considering that you are inside the room, the DM 4 shows the opposite sign.So if the door cover move "Into Room" the value negative, if move "From Room" the value is positive, however you can write the absolute value of the static pressure to the input cell.

ADVISED PRESSURE (P	From Room	-	
CLEAR TEST DATA	Pa	Into Room	
📥 Can 1 mar	No Direction		

9.Write the absolute value of the static pressure to the cell.

DEPRESSURISATION TEST



DM4 depressurisation test piping

- 10.The program advice room pressure to the depressurisation -P1 test point above the input cells. Write to the yellow cells the absolute value of the pressure and the mass flow read from the digital micro-manometer.
- 11.You can make the depressurisation site calibration if you fill out the calibration test points (-P1/Q1). If you do not need the site calibration live the input cells empty. ISO, EN standard request site calibration at the same enclosure, NFPA request site calibration at another enclosure. You can use the program for the calibration tests both at the same enclosure and at a separate enclosure.

If you want to make the site calibration test at the same enclosure, do the following steps:

After the first test you can see at the nr. 7 cell the advised hole to open. Open the hole and write the opened area to the nr. 6 cell. Repeat the test in the same room pressure. After you added to the cell the pressure and flow values, you can see the acceptance of the calibration at the "a" cell. If calibration is OK the cell is green, if not the cell's turn purple.

12. The program advice room pressure for the -P2 test point (50 Pa). If you cannot reach 50 Pa at the room you can make the evaluation as single point test. If the - P2/Q2 input cells empty the program calculate with the single point formula.

OVER PRESSURISATION TEST

Turn around the fan for the pressurisation test (calibration valid only one direction, modify the Pitot tubes connection, according the blower system manual.



DM4 overpressure test piping

- 13. The program advice room pressure to the pressurisation +P1 test point above the input cells. Write to the yellow cells the absolute value of the pressure and the mass flow.
- 14.You can make the pressurisation site calibration if you fill out the calibration test points (+P1/Q1). If you do not need the site calibration live the input cells empty. ISO & EN standards request site calibration at the same enclosure. NFPA request site calibration at another enclosure. You can use the program for the calibration tests both at the same enclosure and at a separate enclosure.

If you want to make the site calibration test at the same enclosure, do the following steps:

After the first test you can see at the nr. 7 cell the advised hole to open. Open the hole and write the opened area to the nr. 6 cell. Repeat the test in the same room pressure. After you added to the cell the pressure and flow values, you can see the acceptance of the calibration at the "a" cell. If calibration is OK the cell is green, if not the cell's turn purple.

15. The program advice room pressure for the +P2 test point (50 Pa). If you cannot reach 50 Pa at the room, you can make the evaluation as a single point test. If

the +P2/Q2 input cells empty the program automatically calculate with the single point formula.

- 16. The cells in this row's available to input the room pressure's absolute value.
- 17. The cells in ihis row's available to input the mass flow values.
- 18. The cells in this rows sum up the mass flow values, if you use more than one fan for the test.

The pink N/A cells are not part of the NFPA test, as the NFPA standards not requests 3 more test point to calculate the correlation, you can live empty.

At the bottom of this section copied some result display

- •CALIBRATION ACCEPTANCE
- •CORELLATION ACCEPTANCE (Due to NFPA 2 test points/direction, the correlation is =1 (100%)
- •NO MIX HOLD TIME
- •MIXING HOLD TIME

The "**CLEAR TEST DATA**" press button clear only the test data, you can use this button if you need to repeat the test. This button only clear the cells with test data all the other project details remains untouched.

This option can be useful if you return to a site to retest the room and project details does nit changed. You can load to the interface sheet the project from the archive, you can clean the test cells with this button and repeat the test.

ISO-EN-VdS-CEA TEST POINTS (MANUAL INPUT)

TEST MAX FLOW AT 60 Pa ROOM PRESSURE : 1698 (m3/h) 1 PCE FAN MAX FLOW (IN					AX FLOW (INFILTED	C E3=9500) /AD	D VALUE/	2	2 9500 m3/h ESTIMATED NR OF FAN NEEDED TO TWS: 1 pcs 3				s 3	
AGENT AIR MIX MASS (Pmi)Pa	4	29.10	5	0.00	0 STATIC PRESSURE ACCEPTANCE ADDED			ALIBR HOLE	6 400	cm2	ADVISED CALIB	R HOLE	7 387.8	cm2
ROOM PRESSURE (P)	P-ST	ATIC DRAFT DIRECTION	ISO-Pmi/2	1 P ^{calibr}	1 2 ^{ISO-Pmi}	A ISO-P3	ISO-P4	C ^{ISO-P5}	ISO+Pmi/2	1 ^{‡P} Calibr	ISO+Pmi	ISO+P3	F ISO+P4	ISO+P5
ADVISED PRESSURE (Pa)	8	From Room	14.6	14.6	29.1	1 0.0	48.0	60.0	14.6	14.6	29.1	10.0	48.0	60.0
CLEAR TEST DATA Pa	9	^{0.0} 16	10.0	10.0	20.2	31.1	40.6	50.6	10.7	10.0	20.8	30.9	40.9	50.5
💠 Fan 1 mass flow	1	7 m3/h	694.0	950.0	1033.0	1319.0	1533.0	1743.0	917.0	1280.0	1395.0	1672.0	1940.0	2199.0
SUM MASSFLOW (Q)			ISO-QIm/2	-Qcalibr	ISO-QIm	ISO-Q3	ISO-Q4	ISO-Q5	ISO+QIm/2		ISO-QIm	ISO +Q3	ISO +Q4	ISO +Q5
(m3/h)	18	8 m3/h	694.0	950.0	1033.0	1319.0	1533.0	1743.0	917.0	1280.0	1395.0	1672.0	1940.0	2199.0
EXPORT DATA TO EXCEL			ACCEPTANCE OF NEG CALIBRATION	a -9.7%	"NEG PRESS" TEST POINTS CORELLATION	b 1.0000	HOLD TIME (NO CONTINOUOS MIX)	C 10.71	ACCEPTANCE OF POS CALIBRATION	d 2.9%	"POS P" POINTS CORELLATION	e 0.9983	HOLD TIME (CONTIN MIX)	f 6.12

DEPRESSURISATION TEST



DM4 depressurisation test piping

1.The program calculates and show the expected maximum mass flow need to reach the maximum room pressure.

- 2.You can add to the yellow cell the maximum flow of your blower fan. At INFILTEC E3 fan case the value is 9500 m3/h.
- 3. The program calculates the number of blower fan need to accomplish the test. If you need more than 1 fan push the + button to open 4 more rows for the additional fans. If you work with more than one fan, the room pressure is the average, the mass flows add together. The program automatically sum up the fan flows at the nr. 18 row.
- 4.The program calculate and shows the weight of the initial agent air mix, after discharge. In the case of single point test (NFPA 12/A HALON). The P1 point room pressure should be around this figure.
- 5.After you write the static pressure to the nr. 9 cell, this cell shows the acceptance of the static pressure.
- 6.If you intend to make site calibration test, after the test of the first -P1/Q1 points the nr. 7 cell, shows the advised hole to open to the calibration test. Open an area close to the adviced and write to the nr 6 cell the opened hole's area.
- 7. Advised calibration hole appears here.
- 8.Set the direction of the static pressure, considering that you are inside the room, the DM 4 shows the opposite sign. So if the door cover move "Into Room" the value negative, if move "From Room" the value is positive, however you can write the absolute value of the static pressure to the input cell.



9.Write the absolute value of the static pressure to the cell.

- 10.The program advice room pressure to the depressurisation -P1 test point (in this case called –Pmi/2 or PIm/2) appears above the input pressure cells. The first test point is 50% of the initial agent-air weight. Write to the yellow cells the absolute value of the pressure and the mass flow read from the digital micro-manometer. This test point can be higher if the gas density and the room height higher (like NOVEC 1230, FM 200). You can see the agent-air mix initial weight's at the nr. 4 cell. (at the example 29,1 Pa). If we test inert agent due to the low density, the weight of the agent-air mix can be much lower than 10 Pa. In this case the program set the Pmi/2 pressure to 10 Pa (as not to advice to test below 10 Pa room pressure)
- 11. The depressurisation site calibration is integral part of the ISO, EN tests. After the first test you can see at the nr. 7 cell the advised hole to open. Open the hole and write the opened area to the nr. 6 cell. Repeat the test in the same room pressure. After you added to the cell the pressure and flow values, you can see the acceptance of the calibration at the "a" cell. If calibration is OK the cell is green, if not the cell's turn purple.
- 12. The program advice room pressure for the -P2 test point (here called Pmi, or Plm). The program calculates the advised value of room pressure and place to the cell above the test data input cell. The flow at this test point called as Qlm.

a, **b**, **c**, the program advise room pressure values for these test points as well. The test of these points are part of the correlation check, required by the ISO,

EN, VdS, CEA standards. The Correlation (R^2) shall be above 0,98. After each test point you can check the correlation at the "e" cells. You can see any deviation at the cell, if the correlation within the limit the cell is green, otherwise purple. You can see the test points at the Pressure vs Flow curve along with the average correlation at the graph.

OVER PRESSURISATION TEST

Turn around the fan for the pressurisation test (calibration valid only one direction, modify the Pitot tubes connection, according the blower system manual.



DM4 overpressure test piping

- 13. The program advice room pressure to the pressurisation +P1 test point (called here +Pmi/2 or +PIm/2) above the input cells. Write to the yellow cells the absolute value of the pressure and the relevant mass flow.
- 14. The pressurisation site calibration is integral part of the ISO, EN test. Open the same hole as the depressurisation test and repeat the first room pressure test. You can see the acceptance of the calibration at the "d" cell. If calibration is OK the cell is green, if not the cell's turn purple.
- 15.The program advice room pressure for the +P2 test point (here called as +Pmi or +Plm), above the input cells. Write to the yellow cells the absolute value of the pressure and the relevant mass flow.

d., e, f, the program advise room pressure values for these test points as well. The test of these points are part of the correlation check, required by the ISO, EN, VdS, CEA standards. The Correlation (R^2) shall be above 0,98. After each test point you can check the correlation at the "e" cells. You can see any deviation at the cell, if the correlation within the limit the cell is green, otherwise purple. You can see the test points at the Pressure vs Flow curve along with the average correlation at the graph.

- 16. The cells in this row's available to input the room pressure's absolute value.
- 17. The cells in this row's available to input the mass flow values.
- 18. The cells in this rows sum up the mass flow values, if you use more than one fan for the test.
 - At the bottom of this section copied some result display
 - •NO MIX HOLD TIME see the "c" cell
 - •CALIBRATION ACCEPTANCE

•CORELLATION ACCEPTANCE < 0,98

•MIXING HOLD TIME "f" cell

The "CLEAR TEST DATA" press button clear only the test data, you can use this button if you need to repeat the test. This button only clear the cells with test data all the other project details remains untouched.

This option can be useful if you return to a site to retest the room and project details does no changed. You can load to the interface sheet the project from the archive, you can clean the test cells with this button and repeat the test.

AUTO TEST DATA INPUT

You can transfer test data from the micro-manometer to the program. The pre-condition is to download and install to your computer the RsKey freeware program.

Link to the download: http://www.aandd.jp/products/software/winct.html

If you have an older INFILTEC DM 4 micro-manometer, you will need to use an RS232 converter cable with USB connection towards your computer.

Newer DM 4 versions equipped with USB and micro USB connections

If the DM 4 switched on and connected to the computer the RsKey automatically select serial port and the program ready to work.

RsKey is forward the data from the DM 4 to the Excel where your cursor is on. Be careful to place the cursor to the right cell, where the data shall start to log in.

You can see below the RsKey setting to work with the DFT 2016 program.

RsKey Ver.5.10	×
A&D Compan	y,Limiled
RS232C	Decimal Point
Baud Rate 9600 -	Separator
Parity N 💌	Comma / Space
Length 8 🔻	Tab
Stop Bit 1	🗆 Setl 📄
Terminator CR 💌	□ Set2 ;
Data Down	Data Format
Cell Down	Time
Type Number 💌	🗍 Date
Interval 8 sec	🔽 Seq. No
Test Start	End

•COM port set automatically after connect the DM4 to the computer and switched on.

- •Data cell shall be down!
- •DM4 will send 6 data at a time to the program.
- •DFT 2016 will separate the data sum up and calculate.

STATIC PRESSURE LOGGING

Place the cursor to the C69 cell.

Set DM 4 time average to 32 sec

Push start button of the RsKey

•DM 4 send data to the program at each 32 sec see example below

AUTO TEST DATA INPUT ; COPY TEST DATA TO THE PRIGRAM 个	↑COPY STAT PRESSURE	IF YOU ARE SATISFIED WITH THE DATA YOU HAVE TESTED, YOU CAN PUSH "COPY STAT PRESSURE" TO THE PROGRAM
STATIC PRESSURE ACCEPTANCE	0.00	
NUMBER OF TEST	2	
ROOM PRESSURE (LEFT CHANNEL)	0.06	CALCULATED AND AVERAGED ROOM PRESSURE DATA (HERE STATIC PRESSURE)
MASS FLOW (ACC DM4 UNIT SET)	0.50	CALCULATED AND AVERAGED FLOW DATA (AT STATIC PRESSURE TEST THIS DATA NOT IN USE)
LOGGING THE TEST DATA	RESET STATIC PRESS	RESET ALL CLEAR ALL RECEIVED DATA. SUGGESTED TO USE BEFORE A NEW TEST. IF YOU INTEND TO REPEAT STATC PRESSURE TEST,
RESET ALL DATA		PUSH "RESET STATIC PRESSURE" BUTTON
DATA LOG FROM DM4 MANOMETER, WITH "RsKey" PROGRAM	- P STAT TEST	- P STAT TEST
P_LEFT	-2	START THE DATA LOGGING HERE
P_RIGHT TIME FLOW MODE	-3 615 0 15 1	FIRST DATA PACKAGE
P_LEFT P_RIGHT TIME FLOW MODE	-3 -4 647 1 15	SECOND DATA PACKAGE

After you have sent the static pressure data to the program, do not forgot to select the direction at the C49 cell to add + or .- to the right calculation

TEST POINTS LOGGING

Click to the P1 pressure input cell D69.

Set the time average at the DM 4 to 8 sec.

Adjust the frequency converter to be the room pressure around the advised value.

Start to log the data. All test point data logging will work same way, only at the static pressure test open the advised hole before the test and close the hole after the calibration test.

	ROOM PRESSURE (P)	P-STATIC DRAFT DIRECTION	ISO-Pmi/2	-Pcalibr	ISO-Pmi
	ADVISED PRESSURE (Pa)	From Room	14.6	14.6	29.1
	CLEAR TEST DATA Pa	0.1	10.0	10.0	20.2
	🕂 Fan 1 mass flow	m3/h	694.0	950.0	1033.0
SUM MASSFLOW (Q)			ISO-Qlm/2	-Qcalibr	ISO-Qlm
	(m3/h)	m3/h	694.0	950.0	1033.0
E	KPORT DATA TO EXCEL		ACCEPTANCE OF NEG CALIBRATION	-9.6%	"NEG PRESS" TEST POINTS CORELLATION
AUT TEST	D TEST DATA INPUT ; COPY つ DATA TO THE PRIGRAM 个	个COPY STAT PRESSURE	个COPY -P1 TEST	↑COPY -P CALIBR	个COPY -P2 TEST
ST/	ATIC PRESSURE ACCEPTANCE	0.00	ACCEPTANCE OF NEG CALIBRATION	-9.6%	"NEG PRESS" TEST POINTS CORELLATION
	NUMBER OF TEST	2	2	2	2
ROOM PRESSURE (LEFT CHANNEL)		0.06	0.00	0.04	0.03
MASS FLOW (ACC DM4 UNIT SET)		0.50	0.00	0.00	0.00
L	OGGING THE TEST DATA	RESET STATIC PRESS	RESET - P1	RESET - P CALIBR	RESET - P2
RESET ALL DATA				CALIDA.	
DATA LOG FROM DM4 MANOMETER, WITH "RsKey"		- P STAT TEST	- P1 TEST	- P Calibr TEST	- P2 TEST
	P_LEFT	-2	0	0	-3
	P_RIGHT	-3	-1	0	-1
	11ME EL OW	615	16	184	200
	MODE	15	13	13	13
		1	1	1	3
	P_LEFT	-3	0	3	1
	P_KIGHT TIMF	-4 647	-1	-3 192	-1 208
	FLOW	1	0	0	0
	MODE	15	13	13	13
		2	2	2	4

DATA EXPORT AND IMPORT, PROGRAM UPGRADES

ATTENTION: AN IMPROPER INSTALLATION OR ANY MISTAKE IN NAMING A FOLDER WILL CAUSE THIS FUNCTION TO BE LOST!

An Excel file is delivered with the program: DFT_DATA.xlsm. You can export and store your data in an Excel file. Click on the +sign at the fan to open the hidden lines.

The "EXPORT DATA" and the "IMPORT DATA" keys will appears.

EXPORT DATA key will open the DFT_DATA.xlsm file and copy all your database from the program to the excel file.

Save the DFT_DATA.xlsm back to the same place. Do not modify the name of the file.

You can view and check all of your data in the Excel file. You can save the Excel with the archived data.

IMPORT DATA will open and copy all the data from the DFT_DATA.xlsm file to the program.

The IMPORT DATA will overwrite your database in the program and will make it possible that you can lose your data in the program entered after the last EXPORT.

If your DFT_DATA.xIsm file is empty and you press the "IMPORT DATA" key, then all your data in the program will disappear.

The key is found in a hidden area in order to avoid any accidental use thereof. Please use the "IMPORT DATA" key with care.

We recommend you to export, from time to time, your data in order to have a copy of databases of the program.

If you have made an unwanted change in the program database, do not save the program back until you are not sure the change is according to your wish.

PROGRAM UPGRADES

Any program upgrade will be available at VIKEX 2000 Kft web page. www.vikex.hu

If you click on VIKEX 2000 Kft logo in the program, the web page will open.

The program upgrade will not be on a regular basis. An upgrade will be available if a change in standard occurs in connection with the Door Fan Test or any repair or improvement has been done.

BEFORE UPGRADE

EXPORT your data to the DFT_DATA.xlsm file by clicking on the "EXPORT DATA" button, as the program upgrade will erase your database content.

DOWNLOAD the upgraded program to the same place where the previous program is located. If you have a valid rkey, the upgraded program should work with your existing rkey. Be sure the program and the rkey are in the same folder.

AFTER UPGRADE

If your upgrade works properly, IMPORT your data from the DFT_DATA.xlsm file to the program by clicking on the "IMPORT DATA" key. This data transfer will allow you to use your previous databases in the upgraded program as well.

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Budapest 30 January, 2017

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