

Door-Fan-Test: Extinction gas holding times according to ISO 14520

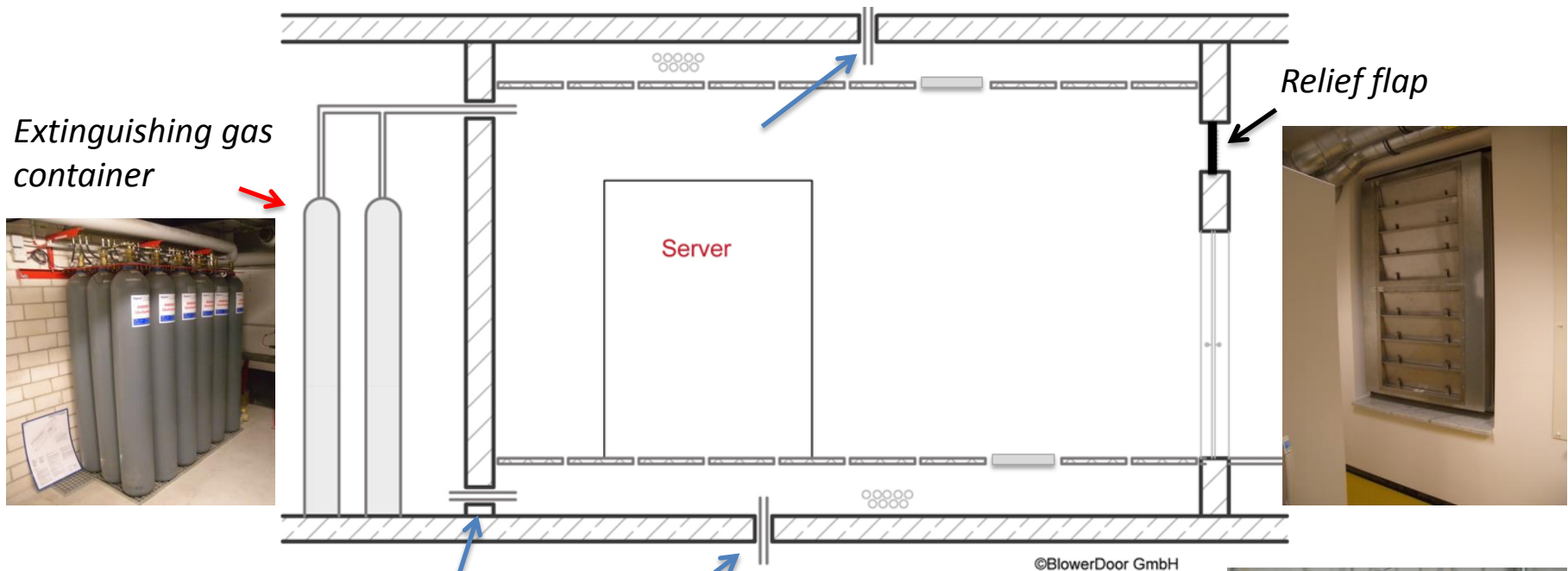


Minneapolis BlowerDoor
FireProtection



Door-Fan-Test

Drawing of a server room with a gas extinguishing system

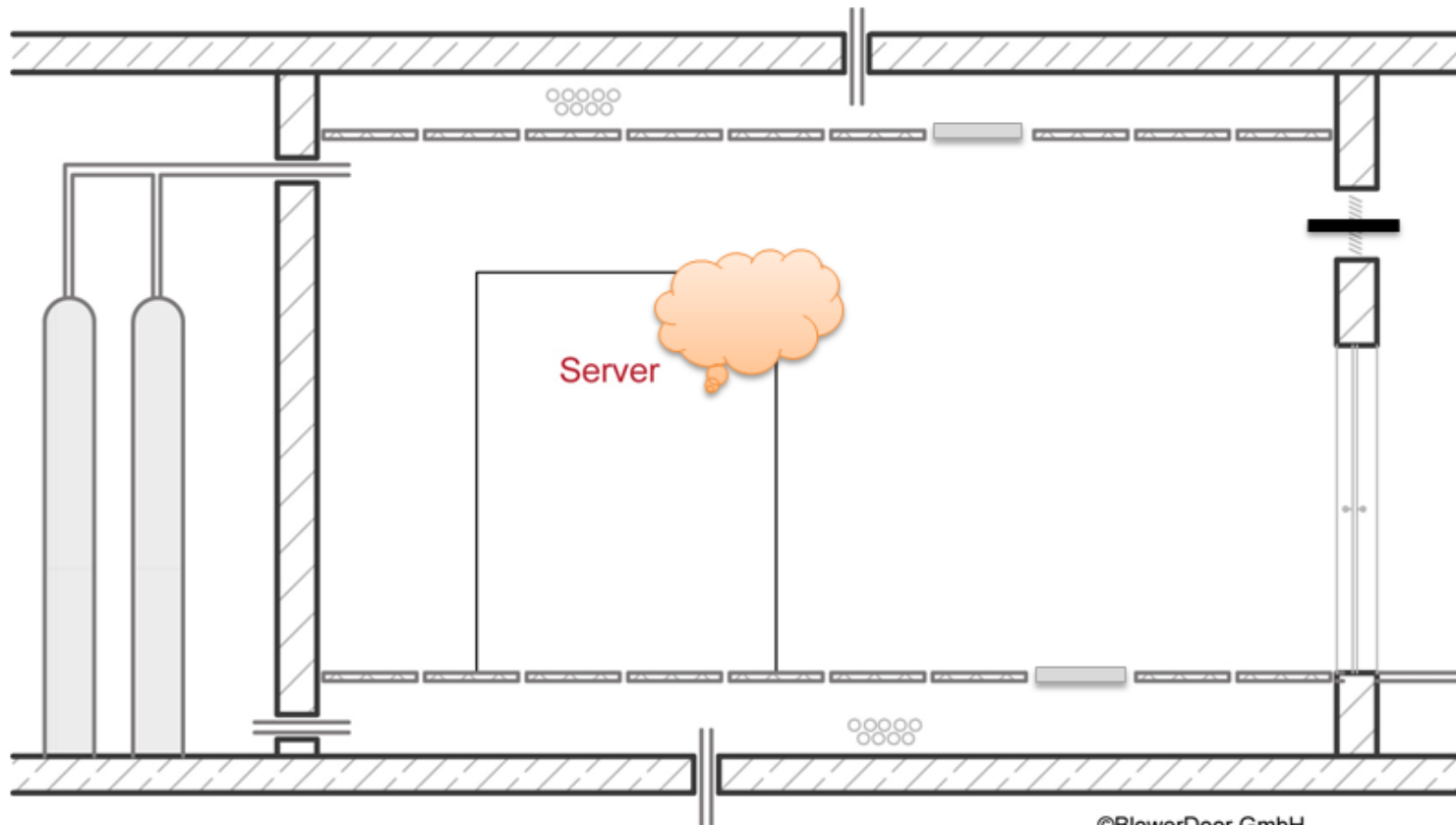


In the suspended ceiling and also in the hollow floor there are supply lines with penetrations.

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Sequence of fire extinguishing:

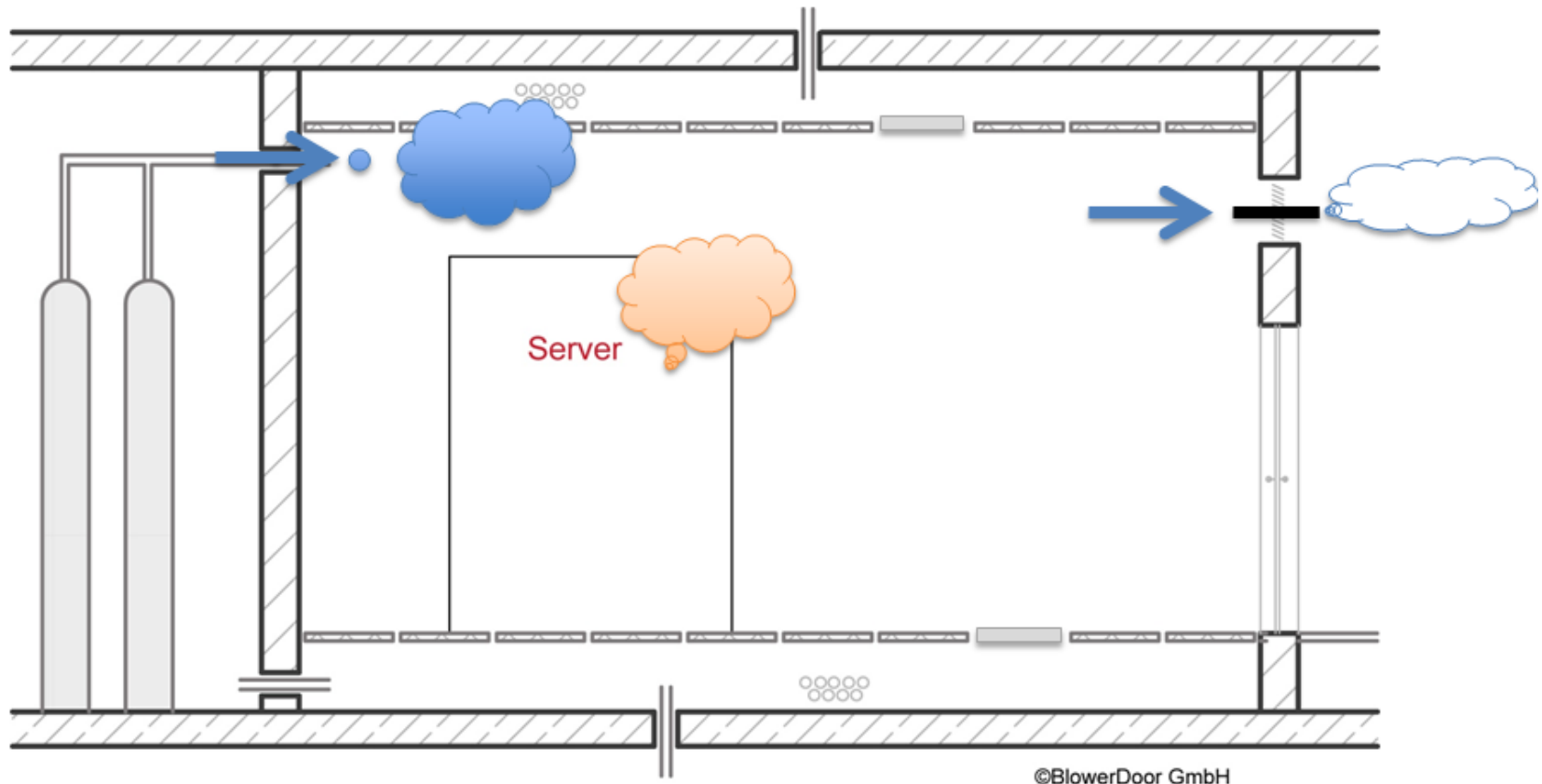
Smoke development – alarm triggering – relief flap opens



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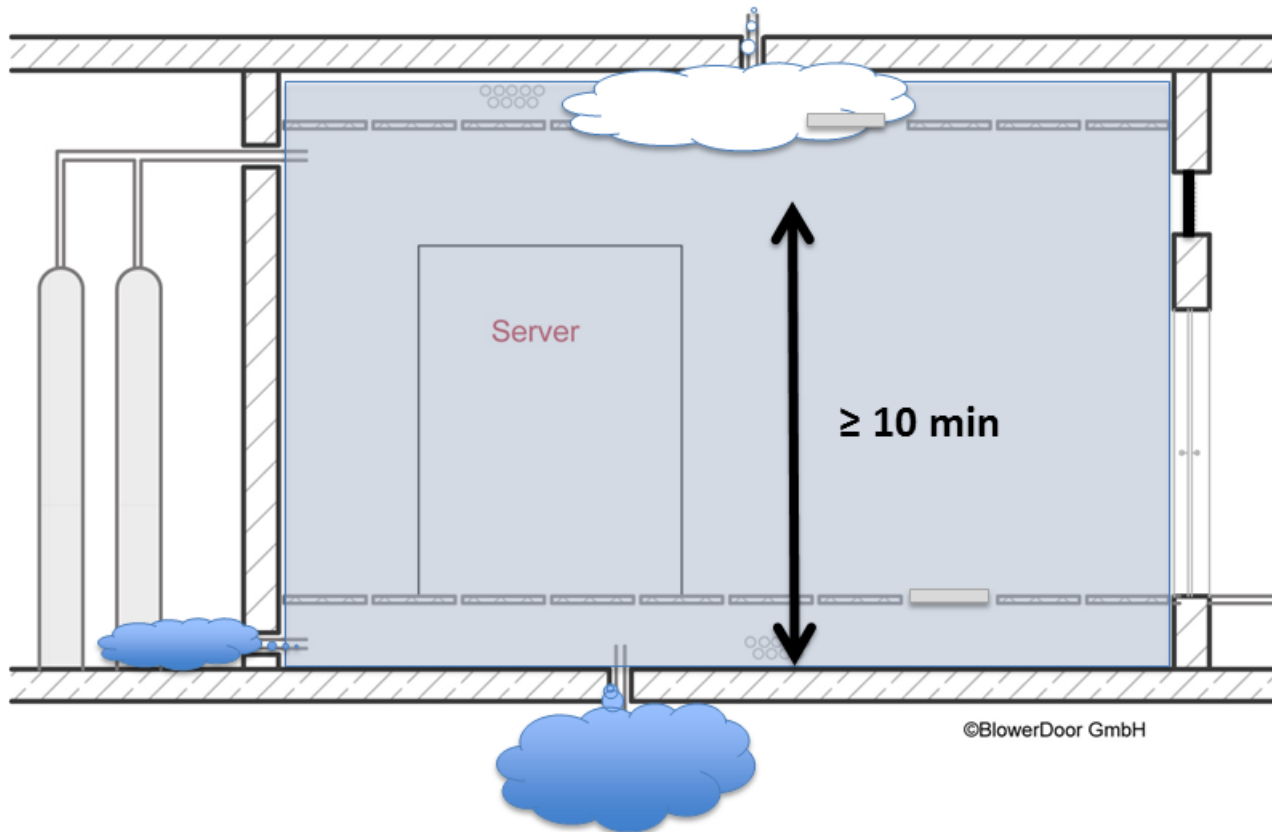
Sequence of fire extinguishing:

The extinguishing gas streams into the room and ousts the air.



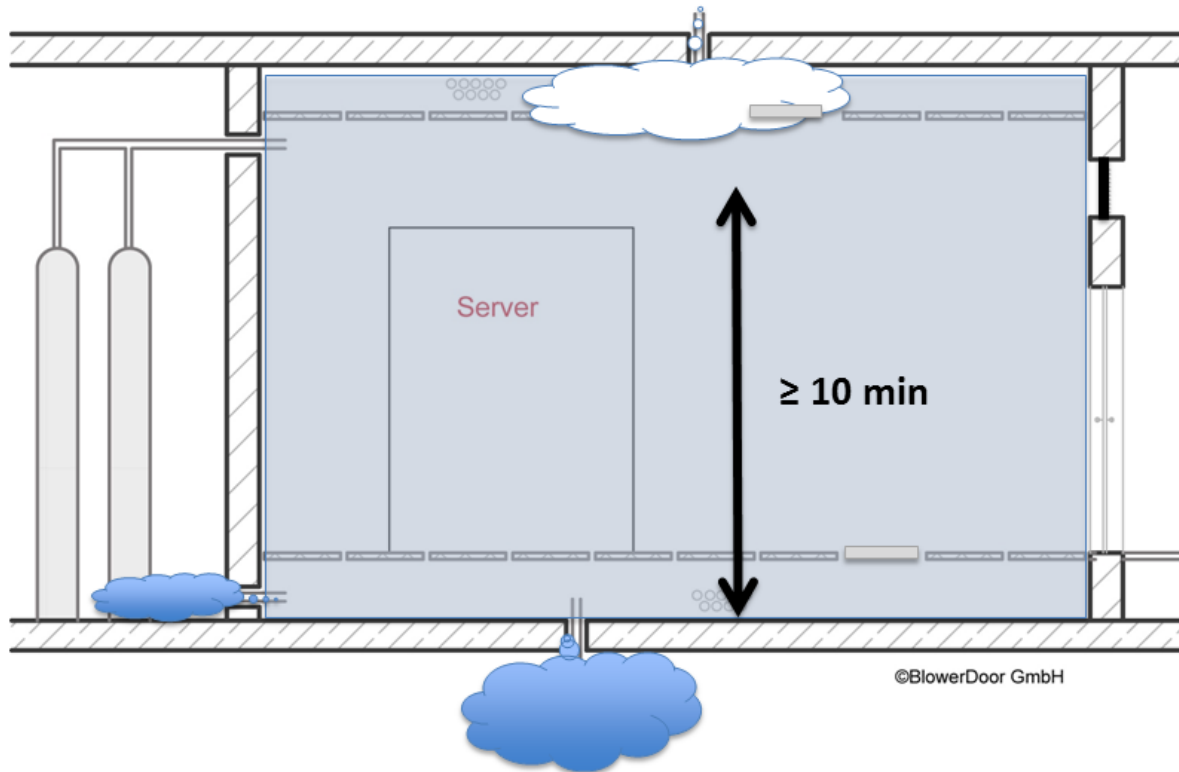
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Sequence of fire extinguishing: The flooded room gets fresh air through the leakages. The extinguishing gas is displaced or diluted.



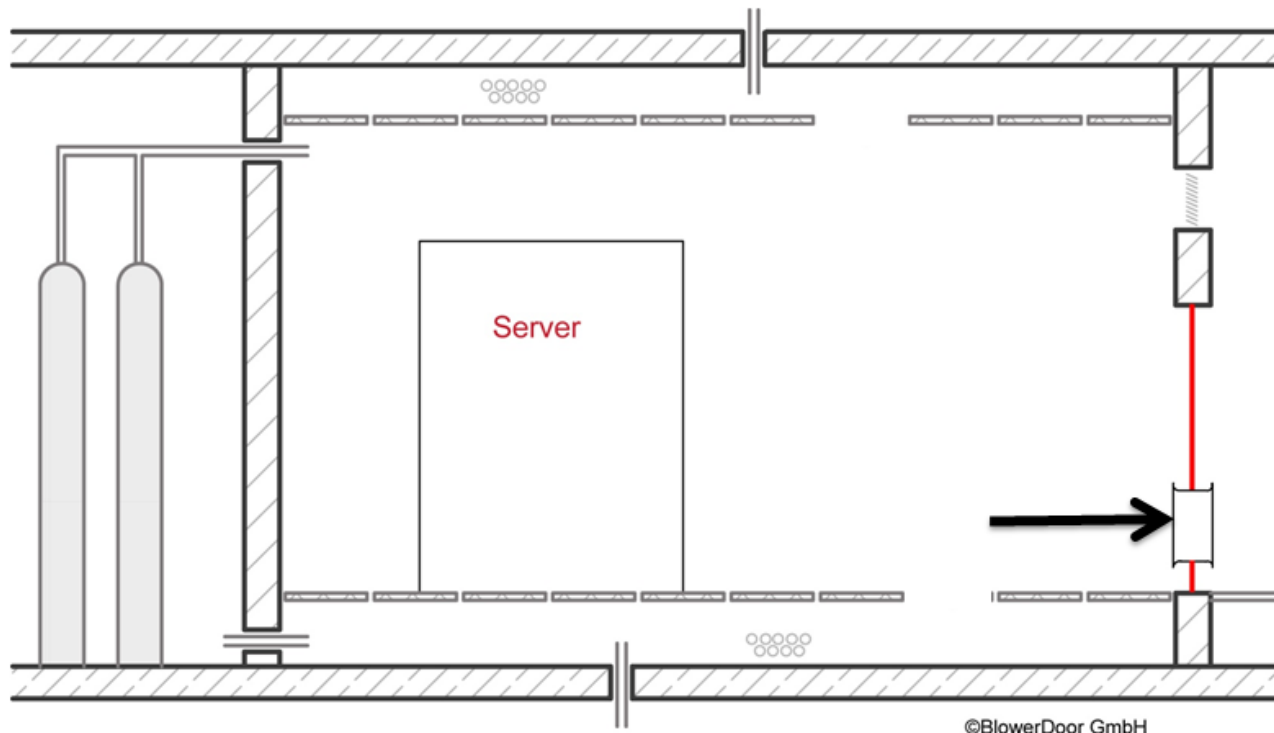
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Question: Does the extinguishing gas maintain the calculated concentration at the specified level or not? This can be tested with the Minneapolis BlowerDoor measuring system.



Door-Fan-Test

A BlowerDoor measuring system is installed in the outer door of the server room. A test (similar to the BlowerDoor test) is performed. A special feature is the field check.



Door-Fan-Test

The so-called field check or on-site inspection is a special feature in the relevant standards for carrying out a door fan test.



With the Field-Check aperture shown here, the standard requirement can be fulfilled by performing an additional measurement with the corresponding opening.

The field check is an obligatory proof of quality for the measurement. However, this does not affect the determined result for the extinguishing gas holding time.

See:

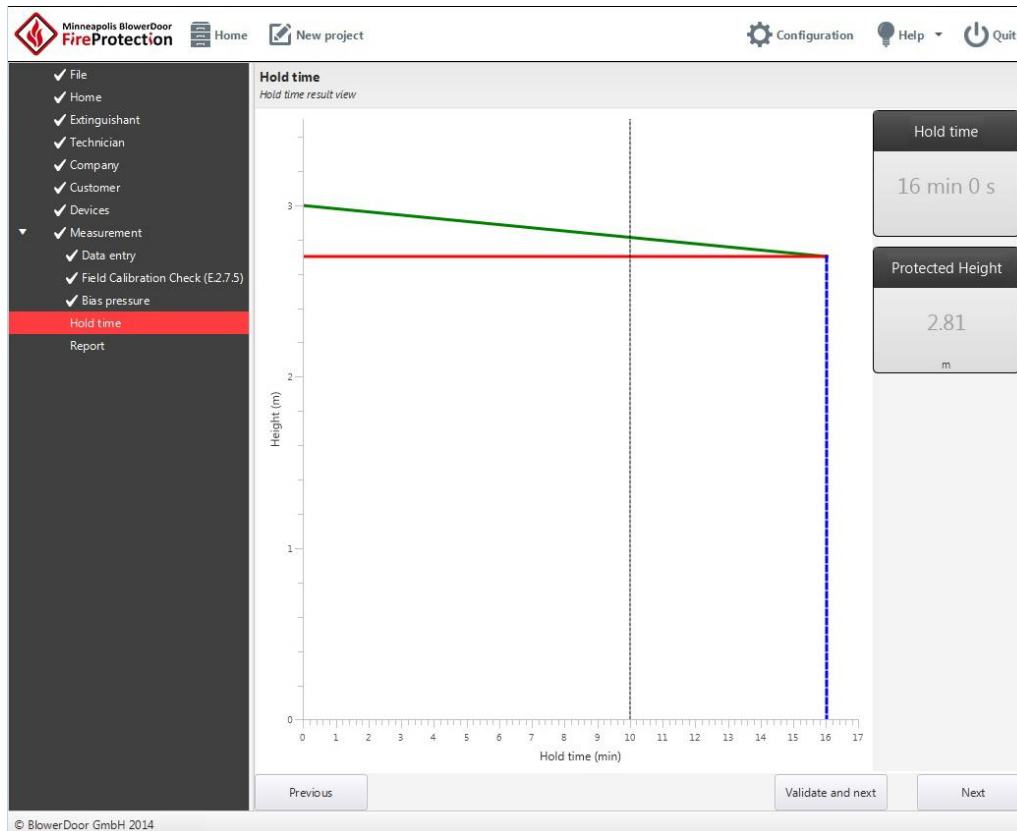
- ISO 14520
- VdS 2380/2381
- DIN EN 15004
- NFPA 2001

Door-Fan-Test

Result of a "Door-Fan-Test" evaluated with the software BlowerDoor FireProtection



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Green line: Decreasing extinguishing gas concentration

Red line: Required extinguishing gas concentration

The intersection point is 16 minutes, so the required 10 minutes are more than fulfilled - the test is passed.

Literature

- Cote, Arthur E.: Operation of Fire Protection Systems, 2003

Other German literature:

- Bolender, Torsten: Luftdurchlässigkeitsmessungen für den Brandschutz – Door-Fan-Test für Räume mit Feuerlöschanlagen, in: Gebäude-Luftdichtheit, Band 2, Fachverband Luftdichtheit im Bauwesen e. V. (Hrsg.), Berlin, 2015
- Gressmann, Hans Joachim: Abwehrender und Anlagentechnischer Brandschutz für Architekten, Bauingenieure und Feuerwehringenieure, 2014
- DIN EN 15004 Anhang E zur Door-Fan-Prüfung
- Merschbacher, Adam: Brandschutzfibel, 2018
- Schneiderei, Peter: Haftung für Datenverlust im Cloud Computing, 2017
- Dürr, Bernd: IT-Räume und Rechenzentren planen und betreiben, 2013