

related test method	<b>EN 1634-3: 2004/2006 Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Part 3: Smoke control test for door and shutter assemblies</b>
subject	<b>Interpretation of Standard on the number of specimens to be tested</b>
reference of original query	<b>Helpdesk item 2010-12: EN 1634-3 interpretation of test standard for doors, followed by proposal agreed in N621</b>

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**Problem**

Which number of specimens is required for Sa and for Sm classification?  
Which method underpressure / overpressure is applied for the tests?

Currently, some laboratories are using the method of underpressure with only one specimen for testing of Sm doors (door sets). This leads to variations in results as the heated side (fire side) is not changed by using this method.

**Reason:**

The reason that a Technical Recommendation is required is that laboratories need to have a common understanding of the issues involved when testing doors (door sets) for the Sa and/or Sm classification. They need to ensure that they follow the same test method in order to minimise variation in results.

For testing of doors (door sets) for a Sa classification both sides (closing face / opening face) need to be tested. This is done by testing either from both sides or only from one side, but with overpressure and under-pressure and the leakage at different pressure levels has to be determined. Only one specimen is required for testing of both sides.

For testing of doors (door sets) for a Sm classification both sides (closing face / opening face) need to be tested. For each side a new specimen has to be used. The leakage at different pressure levels (over pressure) has to be determined.  
A determination of the leakage at "under pressure" levels is not required.

**Recommendation**

This recommendation provides for principles which shall be followed by EGOLF members when testing of Sa and/or Sm doors (door sets).

**Testing of Sa doors (Door sets):**

Only one specimen is required for testing. This is possible as no thermal load is applied to the specimen.

Both testing methods are acceptable. This is possible as the same load is created (either by overpressure or by underpressure).

- Testing with overpressure from the closing face, using specimen no A
  - Testing with overpressure from the opening face, using specimen no A
- or
- Testing with overpressure and underpressure from the closing face, using specimen no A
- or
- Testing with overpressure and underpressure from the opening face, using specimen no A

The leakage to be determined at the different pressure levels (10, 25 and 50 Pa).

### **Testing of Sm doors (Door sets):**

For each side a separate but identical specimen is required for testing (specimen no. A and no. B). This is necessary as the thermal load applied causes mechanical influence (deformation) on the specimen.

The testing method applied is the overpressure method. Overpressure is applied on the heated side (fire side).

- Testing with overpressure from the closing face, using specimen no. A
  - Testing with overpressure from the opening face, using specimen no. B
- or
- Alternatively testing equipment may be used where underpressure is applied on the cold side. Procedure as above with specimen A and B. In this case attention should be drawn to the leakage measurement which is to be determined at ambient temperature  $\text{Nm}^3/\text{h}$

The leakage to be determined at the different pressure levels (10, 25 and 50 Pa).