

## EGOLF RECOMMENDATION 053-2019

Subject of Recommendation (max. 65 characters)	<b>Clarification of test procedures</b>
Related test standard	EN 1366-1
Date of issue	2019-05-13
Reference original query	ER 43:2009
Previous publication number (if applicable)	N891
Keywords (max. 20)	Ducts, restrained, horizontal, thermocouples, steel pins

### **Problem:**

During the last couple of years a number of helpdesk items related to test of ducts have been discussed. Decisions have been taken in the EGOLF meetings and they have been added to the minutes of the meetings (N442 item 10.2.2, N472 item 8.3). At the spring 2008 meeting it was agreed to put these in an EGOLF Recommendation.

### **1 Fixation of the duct (N460, duct workshop)**

Labs have interpreted the EN 1366-1:2014 §7.6.1 “All ducts shall be fully restrained in all directions...” in different ways.

#### **Recommendation**

(EN 1366-1:2014 §7.6.1 “All ducts shall be fully restrained in all directions implies that for vertical and horizontal duct):

- It is not allowed to build the end of the duct flush to the lining without any mechanical connection.
- No flexible material can be installed between the lining of the furnace and the end of the duct (incl. for steel ducts).
- “Fully restrained in all directions” means fully restrained in all directions (expansion, contraction and side ways movement).

### **2 Type of floor construction used when testing horizontal ducts (N460, duct workshop)**

The floor type used to suspend horizontal ducts from can have large influence on the result if the floor deflects during the test. The fact that labs use different types of floors with different deflection creates a spread on the result.

#### **Recommendation**

When testing horizontal ducts the type of roof used when strapping the duct, can be chosen freely by the labs (furnace roof, Aerated concrete slabs reinforced on the unexposed side, concrete slabs etc.).

For both horizontal and vertical duct test EN 1366-1:2014 §7.2. Specifies that the deflection of the floor construction may be reduced e.g. by supporting it by I-beams. If a vertical duct passes the top floor the floor construction may be reinforced except 200 mm around the opening.

### 3 Positioning of thermocouples on steel pins (N434, Helpdesk 2007-02)

It is unclear how the thermocouples should be positioned when testing insulated steel ducts, where the insulation is fixed using pins and washers. Do the pins and washers fall under the definition minor hotspots? (for a square meter approximately 10 pins and washers are used this means that they will cover 1% of the area when using  $\varnothing$  38 mm washers).

#### Recommendation

No thermocouple should be applied on pins if the diameter of the pin is not exceeding 3.5 mm. In case the diameter is bigger than 3.5mm, then a thermocouple should be positioned according to fig. 1 on a pins located approx. 300mm from the penetration and on the top the duct.

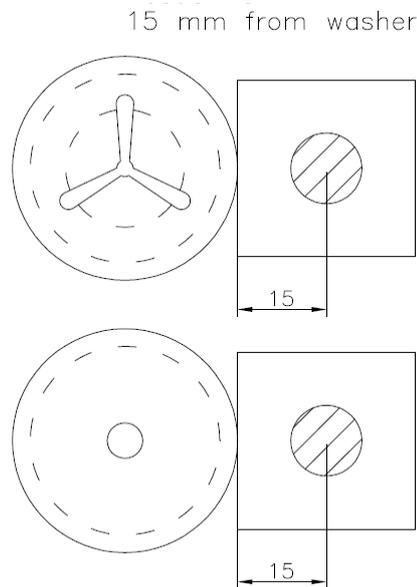


Fig. 1 Position of thermocouples near washers with pin diameter exceeding 3.5 mm