



TECHNICAL REPORT

**Plastics piping kits  
for heating  
systems, consisting  
of pipes made of PB-R  
and mechanical and  
or welded fittings**

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## Foreword

*EOTA Technical Reports are developed as supporting reference documents to European Technical Approval Guidelines and can also be applicable to a Common Understanding of Assessment Procedures, an EOTA Comprehension Document or an European Technical Approval, as far as reference is made therein.*

*EOTA Technical Reports go into detail in some aspects and express the common understanding of existing knowledge and experience of the EOTA bodies at a particular point in time.*

*Where knowledge and experience is developing, especially through approval work, such reports can be amended and supplemented.*

*When this happens, the effect of the changes upon the European Technical Approval Guidelines will be laid down in the relevant comprehension documents, unless the European Technical Approval Guideline is revised.*

*This EOTA Technical Report has been prepared by the approval body Kiwa to define testing procedures in support of the CUAP 08.02/21 “Plastics piping kits for heating systems, consisting of pipes made of PB-R and mechanical and/or welded fittings”.*

## 1. Reaction to fire test of the assembled system (pipe and fitting) – Mounting and fixing according EN 13823

### 1.1 General

In this EOTA Technical Report the “mounting and fixing” procedure according EN 13823 to determine the reaction to fire performance of the assembled system (pipe and fitting ) is formulated.

This ‘mounting and fixing’ procedure is based on

- **Method A**

Method A is in accordance with EN 16000: 2000 – “*Plastics piping systems – Systems within the building structure – Mounting and fixing of components in the test apparatus to thermal attack by a single burning item*”

- **Method B**

Method B is describing a different “mounting and fixing” procedure than formulated in EN 16000, The “mounting and fixing” procedure following Method B is required by the German Authorities for the determination of the reaction to fire performance of the assembled system (pipe and fitting).

### 1.2 Method A

Method A is in accordance with EN 16000.

### 1.3 Method B

#### 1.3.1 Test pieces

The length of the test piece shall be 1 500 mm.

The test piece is an assembly of pipe sections and fittings.

The test piece shall consists of pieces of pipes interconnected with 5 fittings, evenly divided over the length of the test piece. The two “end” fittings are situated 150 mm from both ends of the test piece.

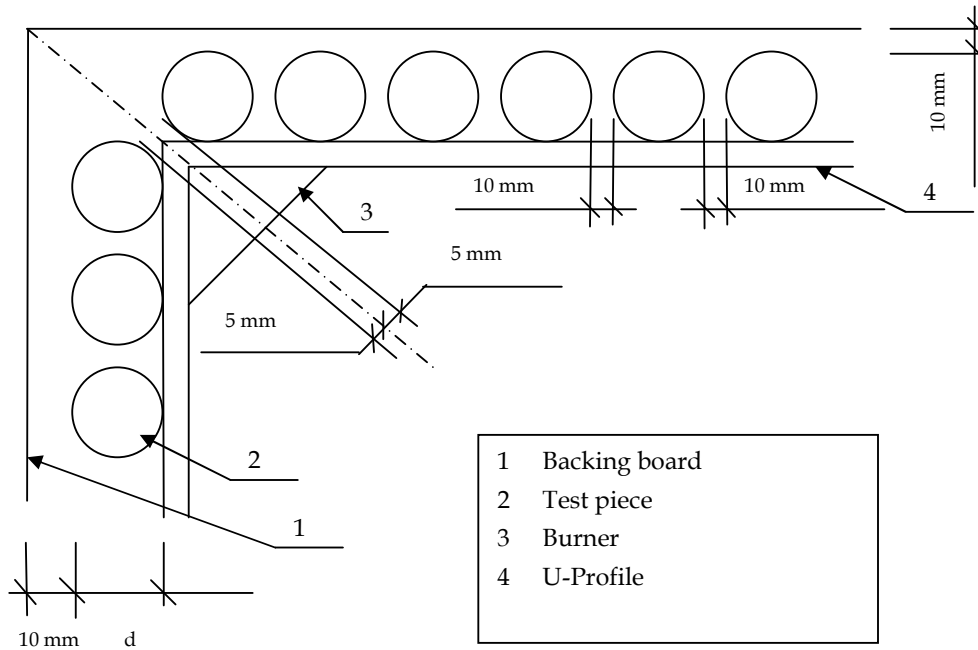
#### 1.3.2 Mounting and fixing of the test pieces

The test pieces shall be mounted and fixed conform the corner test figuration in the figure 1, with the following specification.

- The length of the wings are respectively  $(500 \pm 5)$  mm and  $(1000 \pm 5)$  mm in accordance with clause 5.1.1 of EN 13823;
- The height of the wing is  $(1500 \pm 5)$  mm in accordance with clause 5.1.1 of EN 13823;
- The distance between the test pieces shall be  $(10 \pm 0,5)$  mm;
- The distance between the test piece and the backing board shall be  $(10 \pm 0,5)$  mm;
- The fixing shall be such that for the duration of the test the position of the test piece shall not change.

NOTE: *The corner test configuration is in line with the corner test figuration as given in Figure 4 of EN 15715.*

Figure 1 – principle corner test figuration for mounting and fixing



### 1.3.3 Test procedure

To identify the most onerous test configuration the following 4 tests have to be performed.

- Test 1 : Smallest DN with the minimum wall thickness
- Test 2 : Smallest DN with the maximum wall thickness
- Test 3 : Largest DN with the minimum wall thickness
- Test 4 : Largest DN with the maximum wall thickness

The number of test pieces is dependent on the diameter to be tested.

The number shall be such that as many test pieces as possible shall be mounted on each wing of the SBI test apparatus (see figure 1), taking into account a distance of 10 mm between each test piece.

The test (DN/wall thickness) which has given the most onerous test result shall then be subjected to two further repeated tests with the same DN/wall thickness .

### 1.3.4 Validity of test results of a product range

A test performed with a test piece of DN 160 or DN 180 with the corresponding maximum wall thickness covers also the higher DN with the maximum wall thickness up till DN 250.

*NOTE: The choice of DN 160 or DN 180 depends on the product range in the delivery program of the manufacturer.*

## 2. Normative references

- EN 13823: 2003** Reaction to fire tests for building products – Building products excluding floorings exposed to the thermal attack by a single burning item
- EN 15715: 2009** Thermal insulation products – Instructions for mounting and fixing for reaction to fire testing – Factory made products
- EN 16000: 2010** Plastics piping systems – Systems within the building structure – Mounting and fixing of components in the test apparatus to thermal attack by a single burning item