

<b>GNB-CPD</b>  <b>SH02</b>	<b>Guidance from the Group of Notified Bodies for the Construction Products Directive</b>  <b>89/106/EEC</b>	<b>NB-CPD/SH02/06/026</b> Issued: 4 July 2006  <b>APPROVED – GUIDANCE</b>
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## **GNB-CPD position paper from SH02 - Fire resistance of penetration seals**

### ***Rules for undertaking extended application of test results of fire resisting elements – Penetration seals***

#### **General scope, limitations and aim of this guidance for Notified Bodies (NBs)**

This position paper contains guidance for Notified Bodies (NBs) involved in the attestation of conformity of the fire resistance of penetration seals. The purpose is to help NBs work equivalently and come to common judgments. This guidance contains informative material (which NBs should or may follow) and normative guidance (which NBs shall follow or at least work equivalently to as circumstances demand).

This guidance is thought necessary to provide clarity and completeness for NBs so that they can work equivalently. It **supplements and makes practical for NBs** the harmonized standards, approved AG guidance, and Standing Committee guidance in the form of GPs, which also apply - unless otherwise explicitly stated in this guidance. This position paper should **not** contradict nor extend the scope of the work and role of a NB, nor impose additional burdens on the manufacturer, beyond those laid down in the CPD and the harmonized standards.

This guidance should be considered valid until the relevant standards are amended to include the guidance (as thought fit by the CEN/TC); or until guidance from Commission, SCC, and AG has changed on relevant matters. Whereupon, the paper should be considered for withdrawal/revision and be replaced by new guidance as necessary.

This position paper was considered approved by SH02 on 22 December 2002 and by Advisory Group (AG) on 29 April 2005.

## **1 Background / consideration**

### **FSG Recommendation 008**

CEN/TC127 has been mandated to develop European Standards for extended application. Until these ENs can be finalised the European Fire Regulators Group asked the FSG to develop simple rules which can be used by Notified Bodies.

These rules are in line with current discussions and agreements in CEN/TC127.

## **2 Agreement**

Notified Bodies will use these rules when undertaken extended application of test results of fire resisting elements as part of the attestation procedures.

This Position Paper is to be used in conjunction with the general requirements given in GNB Position Paper NB-CPD/SH02/06/023.

## **3 Scope**

This Position Paper contains the extended application rules applicable to penetration seals used to maintain the separating function of a fire resisting element when penetrated by a service.

This Position Paper should be read in conjunction with the general requirements given in GNB Position Paper NB-CPD/SH02/06/023.

## **4 Permitted changes**

### **4.1 General**

The types of general changes e.g. interpolation permitted, given in the general requirements in GNB Position Paper NB-CPD/SH02/06/023, are also applicable to penetration seals.

The guidance given below has been taken from CEN TC 127 document N 1802 produced by ad-hoc 28. The information contained within the document has been simplified and condensed into two tables, one for general application and a second for specific seal types. This mirrors the ad-hoc 28 approach given in the document.

In all cases the evidence required to undertake extended application is a full EN test of the system under consideration. The relevant test method is prEN 1366-3 which is still in course of preparation.

The type of extended application to be undertaken are rules in all cases.

### **4.2 Multiple changes**

The number of changes that can be made using the rules in this Position Paper vary according to the complexity of the rule and the number of modifications being considered.

For penetration seals, the rules are all simple and do not require further evaluation e.g. by calculation. Consequently, multiple changes can be undertaken in one extended application.

## 5 Rules

### 5.1 General guidance (applicable to all generic seal types)

Item to be changed	Separating elements	Penetrating services Metal pipes	Plastics/fibre reinforced plastics/glass pipes	Single or bundled cables (not standard configuration)	Cable trunking	Comments/limitations
Change in linings of lightweight supporting constructions	✓					Linings may be changed from the standard constructions given in prEN 1366-3 if they have an equivalent thickness and an equivalent or greater fire resistance. No other changes to lining allowed
Change in pipe material		✓	✗			Provided melting point and thermal conductivity shall be equal to or less than that tested.
Decrease in pipe diameter		✓	✓			Only acceptable for plastics/fibre reinforced plastics/glass pipes if wall thickness is maintained
Increase in pipe wall thickness		✓	✓			Only acceptable for metal pipes for integrity only. Not permitted if insulation is required. Only acceptable for plastics/fibre reinforced plastics/glass pipes if increase limited to 1mm
Change of insulation material for post-insulated pipes		✓				For post-insulated pipes insulation material may be changed within the same generic type e.g. rock fibre, PVC, etc where the alternative provides an equivalent or higher reaction to fire classification. For pre-insulated pipes a change of insulation material is not acceptable.
Decrease in thickness of insulation for post insulated pipes		✗				Not acceptable
Increase in length of applied insulation		✓				
Decrease in length of applied insulation*		✗				Not acceptable

## 5.1 General guidance (applicable to all generic seal types) cont..

Item to be changed	Separating elements	Penetrating services Metal pipes	Plastics/fibre reinforced plastics/glass pipes	Single or bundled cables (not standard configuration)	Cable trunking	Comments/limitations
Decrease in size				✓	✓	Acceptable for single cables/bundles subject to being within $\pm 10\%$ of the tested conductor to cable cross sectional area (CSA) ratio Acceptable for cable trunking subject to not exceeding the ratio of overall CSA of cable(s) to the internal CSA of the trunking
Increase in conductor CSA				✓		Acceptable up to 10%
Inclusion of trunking					✓	Acceptable subject to: trunking made from cable tray material of the same type and thickness as tested; CSA of cable(s) may be up to 60% of the internal CSA of the trunking; the perimeter of the trunking not exceeding the maximum cable tray width; provision of an internal seal within the trunking coincident with the position of external seal.

## 5.2 Specific guidance for individual seal types

Item to be changed	Type of seal									Comments/limitations
	Bag/ pillow	Board	Foam	Mastic	Mortar	Pipe wraps	Plug/ block	putty	transit systems	
Increase in seal depth	✓		✓	✓	✓	✓	✓	✓	✓	
Increase in size of aperture (up to 50% increase in area)	✓		✓	✓	✓	X	✓	✓		Only applicable to lightweight supporting constructions if tested at 3m by 3m. Only applicable to concrete or masonry supporting constructions if tested in standard concrete or masonry supporting constructions. For bag/pillow seals restrictions above do not apply, but suitable support for the service must be demonstrated in the floor orientation.
Decrease in size of aperture	✓	✓	✓	✓	✓	X	✓	✓		Provided there is sufficient room to install the seal. Seal/service area ratio should be maintained for foam, mastic & putty seals.
Change of shape of aperture	✓					X				Historic data may be used to justify this change.
Variation in seal shape		✓								Acceptable for board seals only. However, there must be no additional board to board joints. Historic data may be used to justify this change.
Change of size of the units that make up the seal	✓						✓			Change in sizes of seals (units) are for bag/pillows and plug/blocks only. Historic data may be used to justify this change.
Change in position of seal within thickness of separating element	✓	✓	✓	✓	✓		✓	✓	✓	The position of the seal within the thickness of the separating element may be changed provided the distance of the seal to exposed face is not reduced. No other positional changes are allowed.
Change in position of pipe closure within thickness of separating element						✓				Test results from surface mounted pipe collars may be used to cover partly recessed pipe collars (up to 50% of its depth into the wall/floor) but not fully recessed/cast-in applications.
Change of orientation of seal	✓		✓	✓	✓	✓	✓	✓	✓	Acceptable from floor to wall but not vice-versa. Historic data may be used to justify this change.
Increase in board thickness and/or density (board seals)		✓								For board seals only. Supporting evidence for framing systems/fixings must be provided.
Increase in air gap (board seals)		✓								For board seals only. Provided air gap was used in the test.
Change in internal support frames (board seals)		✓								For board seals only. Only acceptable if based on proven calculation (still to be agreed).
Increase in depth of backing materials (mastic seals)				✓						Applicable to mastic seals only. Acceptable for materials of Euroclass A1 and A2 only. (material in this rule presumably means backing material)
Increase in no of transit frame openings in aperture									✓	Acceptable provided at least a twin opening was tested. Historic data may be used to justify this change.
Decrease in transit frame opening size									✓	Historic data may be used to justify this change.