

GNB-CPD SG19	Guidance from the Group of Notified Bodies for the Construction Products Directive 89/106/EEC	NB-CPD/SG19/12/086 Issued: 2 February 2012 APPROVED - GUIDANCE
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GNB-CPD position paper from SG19 - EN 14303 to EN 14309, EN 14313 and EN 14314

Guidance to notified bodies on the transitional arrangements for the CE marking of thermal insulation products for building equipment and industrial installations

General scope, limitations and aim of this guidance for notified bodies

This position paper contains guidance for notified bodies (NBs) involved in the attestation of conformity of thermal insulation products for building equipment and industrial installations according to EN 14303 to EN 14309, EN 14313 and EN 14314. 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/or normative guidance (which NBs shall follow or at least work equivalently to as circumstances demand).

The primary document for NBs is the edition of the relevant harmonized standard that is currently cited in the Official Journal of the EU to which the manufacturer works. 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 Advisory Group 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 or 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 SG19 on 23 September 2010 and by Advisory Group on 29 January 2012.

NOTE During the approval process for this position paper, a NB raised concerns regarding the calibration procedure for higher temperatures (the latter part of Section 3.1). The chairman of SG19 decided that the paper should be published unchanged, but that SG19 would consider those concerns, and that this might lead to a revision of this position paper.

1 General

These rules apply for the hEN product standards for thermal insulation products for building equipment and industrial installations (EN 14303 to EN 14309, EN 14313 and EN 14314)

CE marking to these standards became possible on 01/08/2010. The date of the end of the co-existence period for CE marking, as given in the OJEU and on NANDO, is 01/08/2012.

This position paper covers the following transitional arrangements:

1. Acceptance of test reports based on prENs for the ITT tests.
2. Historical data as a basis for declaration of thermal properties.

2 Acceptance of testing reports based on prEN's for the ITT tests.

Historical data are defined as results of thermal tests performed according to the relevant European testing standards before the start of the procedures related to CE-marking.

Test reports established in a period before the publication of the hEN can be taken into account within the assessment and the ITT providing all of the following conditions have been fulfilled:

1. Under system 1 Sampling has been done by the product certification body (later becoming a notified certification body), or by his representative. Documentary evidence must be available (identification of the samples, dates, traceability to the FPC, ..., reporting). It is the responsibility of the notified certification body to accept/reject test reports.

 Under system 3 Full records of sampling must be available in the manufacturer's technical file, together with records of the manufacturer's FPC system.
2. Under system 1 or 3 The test methods have been executed according to ENs or prENs already passed the CEN enquiry stage 41.
3. Under system 1 The manufacturer can provide evidence to the 3rd party that the product tested is identical to current production.
4. After the end of the co-existence period only test reports produced in accordance with published standards are allowed.

3 Historical data as a basis for declaration of thermal properties

3.1 General

In order to obtain a satisfactory declared level, a sufficient number of test results is required.

During the co-existence period it may be difficult to achieve a sufficient number of test results if they must all be based upon the new technical basis.

If the initial declaration is based on an insufficient number of test results, the results will be uncertain.

The Sector Group 19 finds it acceptable that historical data is used as a basis for declared values for thermal properties within the limits mentioned below. These limits have been set up to ensure that the use of historical data does not affect the credibility of the conformity mark.

Historical data may only be used for the determination of the thermal conductivity curve as a function of the temperature as part of the ITT. The data shall be proven to be made on equipment with documented, traceable calibration, in a laboratory that complied with EN ISO 17025. The European calibration level for thermal conductivity is defined for Guarded Hot Plate (GHP) equipment at the low temperature range (-10 to 50 degree C) by the Institute for Reference Materials and Measurements' IRMM 440 reference material. For higher temperatures, flat products and pipe insulation the European level is defined by use of reference material, glass beads, and calculation of the transfer factor at infinitesimal temperature difference and for any type of equipment. The measured values shall be within ± 3 % of the expected values for temperatures up to 500 °C.

NOTE The glass beads are defined in the document "The true thermal conductivity". The reference material is made available by Forschungs Institut für Wärmeschutz München (FIW).

Calibration shall include comparative testing among the European laboratories involved.

3.2 Manufacturer's historical data

Under system 1, any use of historical data shall be agreed upon between the notified body and the manufacturer.

Under systems 1 or 3, historical data less than 3 years old at the date of declaration may be included in the calculation if the following requirements are met:

1. The differences from the results of the comparative tests at the corresponding temperature shall be taken into account.
2. The product and production specifications are unchanged, as far as the thermal conductivity as a function of the temperature is concerned, from the period when the historical data were generated.
3. Each test can be traced back with respect to product, production line, and production run.
4. The tests have been performed in accordance with the principles of the relevant EN 14303 to EN 14309, EN 14313 and EN 14314 standards.

3.3 Initial Type Testing (ITT)

The ITT consists of tests by the notified body on samples taken from four different production runs. The measured thermal conductivity values shall be processed according to EN ISO 13787.

Use of historical data is not foreseen in the EN standards, but as the testing capacity of the notified bodies is limited, particularly for the measurement of the thermal conductivity curve at high and low (cryogenic) temperature, it is recommended that the use of historical data should be accepted. Historical data less than three years old may be included in the ITT, if the following requirements are met.

1. The differences from the results of the comparative tests at the corresponding temperature shall be taken into account.
2. Only the 2 most recent measurements on the specific product (group) and production unit (line) may be used.

3. The product and production specifications are unchanged, as far as the thermal conductivity as a function of the temperature is concerned, from the period when the historical data were generated.
4. The tests have been performed in accordance with the principles of the relevant EN 14303 to EN 14309, EN 14313 and EN 14314 standards. If under system 1, the samples were taken by a 3rd party, eg a product certification body, according to an existing national certification scheme.
5. Each test can be traced back with respect to product, production line, and production run.
6. Use of historical lambda data does not avoid the need for initial type testing for other characteristics as required in the product standard.

3.4 Example: initial type testing using historical data

Table 1 – Number of test results for ITT (see table 2 for reaction to fire for pipe insulation)

Property. ²	Historical Samples ¹ (test results)		Samples for ITT (Four test results from four different production dates)				Total number of test results
	1	2	1	2	3	4	
Thermal conductivity curve and thickness							
– for pipe insulation	X	X	-	-	X	X	4
– for flat products	-	-	Sample taken from one or more of the 4 dates				1
Compressive strength / Compressive stress ¹	-	-	X	X	X	X	4
Water absorption	-	-	X	X	X	X	4
Water vapour diffusion resistance ³	-	-	X	X	X	X	4
Maximum service temperature ³			Sample taken from one or more of the 4 dates ⁴				1
Trace quantities of water soluble ions and the pH value	-	-	X	X	X	X	4
Reaction to fire - for flat products (see table 2 for pipe insulation)	-	-	Sample taken from one or more of the 4 dates ⁴				1

Notes:

- 1) Historical data may only be used under the conditions specified above. Tests on two samples for the ITT can be omitted if historical data is used. The total number of test results in the ITT may not be reduced. For flat products only one test result is needed for the ITT. Therefore no historical data is acceptable.
- 2) The cross indicates the test results which should be taken (in the case of historical data) or carried out (for Initial Type Testing). One test result may consist of more measurements; see the relevant standard for further information. For thermal conductivity see also EN ISO 13787.
- 3) Testing of water vapour diffusion resistance and maximum service temperature for CE marking is the responsibility of the manufacturer.
- 4) The number of measurements required to give one test result is 3 for maximum service temperature and for single burning item (SBI) testing for reaction to fire. In general the number of measurements needed to give one test result is defined in the relevant test and/or product standard.

Table 2 – Number of test results for ITT for reaction to fire for pipe insulation)

	Insulation thickness ranges for pipe insulation				
	≤ 25 mm	≤ 25 mm to 50 mm	≤ 25 mm to 75 mm	≤25 mm to 300 mm	> 300 mm
Test specimens (Pipe diameter/insulation thickness)	Ø22 / 25 mm; (multi-layered up to at least 25 mm)	Ø22 / 25 mm Ø22 / 50 mm	Ø22 / 25 mm Ø22 / 50 mm Ø22 / 75 mm	Ø22 / 25 mm Ø22 / 50 mm Ø22 / 75 mm	Test as flat product
Total no. of SBI test results (measurements)	1 SBI result (3 measurements)	2 SBI results (2 x 3 measurements)	3 SBI results (3 x 3 measurements)	3 SBI results (3 x 3 measurements)	See table 1
<p>In case of more than 1 SBI test result the worst of any of the test results are used in the reaction to fire classification report; EN 13501-1. When a worst case thickness is determined for a product from a manufacturer for one production unit, only that thickness needs to be tested for other production units using the same process for this manufacturer independent of factory. This is only valid if the manufacturer uses the same reaction to fire declaration for all product thicknesses.</p> <p>A manufacturer is allowed to declare different reaction to fire classifications for different thickness ranges.</p>					

Examples:

1. A pipe insulation product produced with the insulation thickness ranges 18 – 20 - 25 – 50 – 75 – 225 – 305 mm shall be tested at: Ø22/25 + Ø22/50 + Ø22/75 + as a flat product for the 305 mm product; in total 4 SBI test results (4 x 3 measurements)
2. A pipe insulation product produced with the insulation thickness ranges 18 – 20 – 25 – 48 – 60 mm shall be tested at: Ø22/25 + Ø22/48 + Ø22/60; in total 3 SBI test results (3 x 3 measurements).