

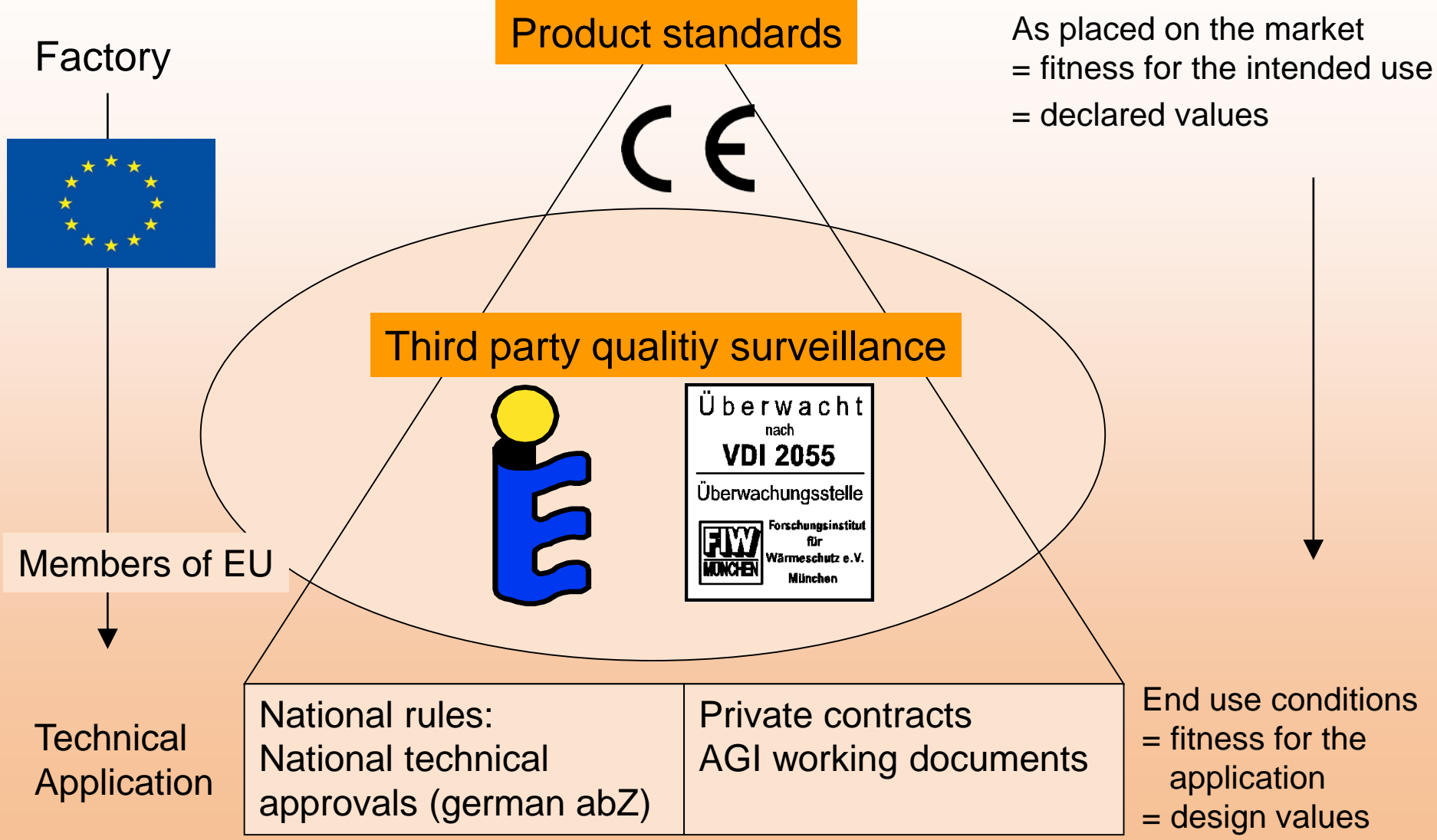
## Voluntary Quality assurance



Why do we need a product certification?  
What are the key benefits ?

....

# Product certification – declared and design values

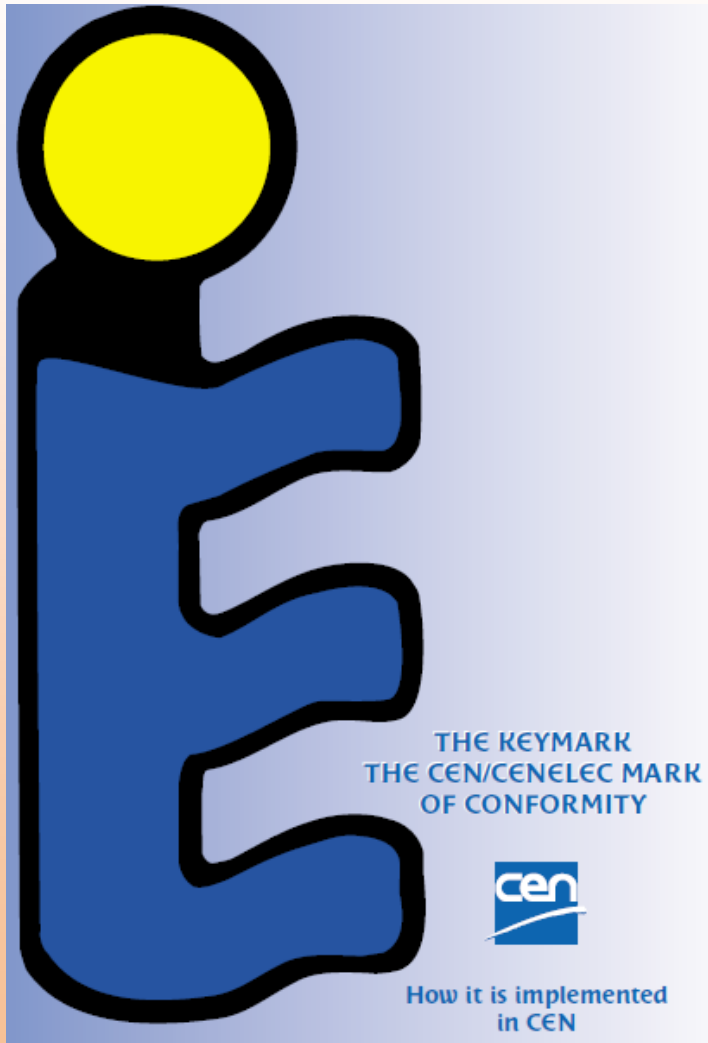


## VDI surveillance according to VDI 2055

- Introduced since more than 30 years
- VDI 2055, guidance papers and AGI-working document Q
- Certification body: **DIN CERTCO**
- Surveillance body: MPA NRW, FIW
- Testing body: MPA NRW, FIW
- Voluntary quality mark
- Product certification
- Conformity to the technical data sheet of an insulation product
- worldwide accepted
- product tests and check of the FPC every year
- No evidence for the fitness of the intended use
- EUCEB/RAL are required but not tested
- Certificate valid 2 years
- surveillance contract needed



## Keymark surveillance according to CEN/CENELEC



- Developed by the European standardisation bodies, which are members of CEN and CENELEC
- For building insulation products covered by an harmonized European product standard (start 2002)
- Now also for industrial insulation products
- Voluntary product certification scheme with a quality mark
- Attestation that the product is conform to the declared characteristics with a certificate
- Audit testing per factory



# COOPERATION AGREEMENT relating to the KEYMARK

between

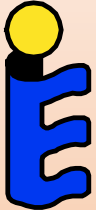
**CEN**

European Committee for Standardization

and

**VDI**

Verein Deutscher Ingenieure  
(Association of German Engineers)



## QAC Foundation 12 July 2011

With members of Industry (manufacturer, customer and clients), C/I/T

**VDI**

# Gütesicherung von Dämmstoffen

Am 12. Juli 2011 konstituierte sich in München das QAC – Quality Assurance Committee –, das erste europäische Fachgremium im VDI, das ebenfalls vom CEN-Certification Board mitgetragen wird. Das Gremium wird sich der Zertifizierung von Dämmstoffen für die Betriebstechnik nach Europäischen Normen widmen. Diese Dämmstoffe können wahlweise das Keymark-Zeichen des CEN oder das Zeichen „Überwacht nach VDI 2055“ erhalten. Auf der Grundlage einer Vereinbarung zwischen CEN und VDI werden beide Zeichen als gleichwertig anerkannt. Für neuartige Dämmstoffe, die noch nicht durch europäische Normen abgedeckt sind, wird ausschließlich das VDI-Zeichen für die Überwachung der vom



Teilnehmer der konstituierenden Sitzung des QAC – Quality Assurance Committee

Hersteller deklarierten Eigenschaften herangezogen.

Künftig wird sich das Gremium auch mit der Zertifizierung kompletter Dämmsysteme befassen und dazu ein Regelwerk erstellen.

Zum Vorsitzenden des QAC wurde am 12. Juli Erik Rasmussen von Rockwool International, zum stellvertretenden Vorsitzenden Roland Schreiner vom FIW München gewählt.

## QAC scheme rules

2 signs

2 scheme rules

With the same certification procedure

With same test frequencies (EN 13172, Annex A)

Keymark only for industrial insulation products covered by an harmonised EN-product standard

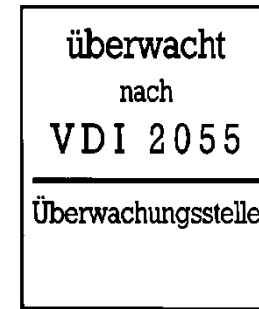
VDI sign for all industrial insulation products and systems

Product types, subtypes and groups possible

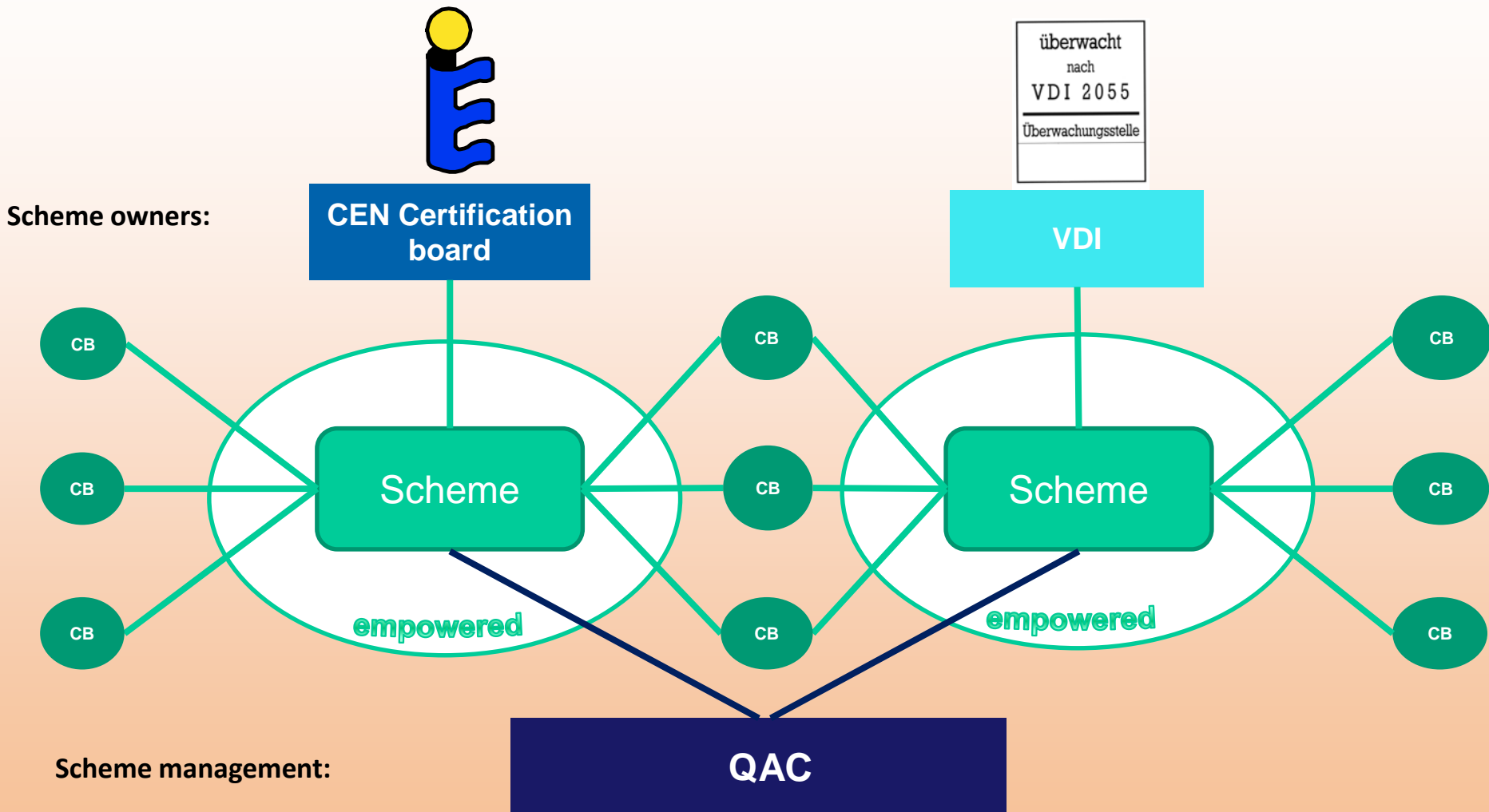
With nearly the same license costs and costs for  
certification  
inspection  
testing

With synergy-effects for FPC within the CE-marking

Defines the European level of thermal conductivity



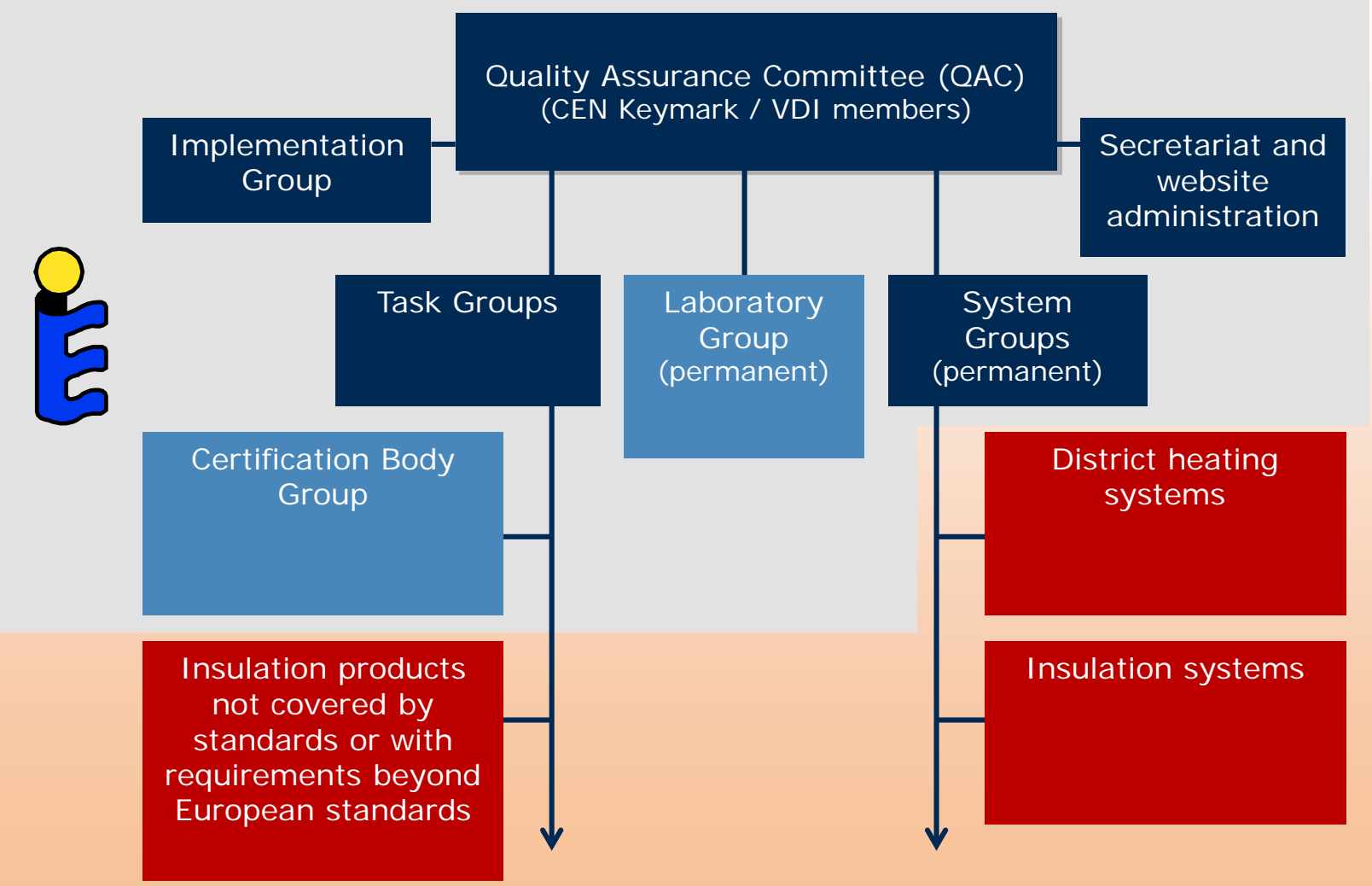
# Mutual European scheme “technical thermal insulation”



Certification bodies (CBs) may issue certificates related to one or both schemes (empowered by Keymark and/or the VDI) and use registered inspection and registered testing bodies



# Organisation



überwacht
nach
VDI 2055
Überwachungsstelle

  relevant only for VDI with additional scheme rules

## Product type and Subtypes - Rules for fees

The fees shall be determined based on the following definitions.

### 1. Product type (1000 € per year):

- All products covered by the certification contract (see scheme rules) in accordance with the same one EN product standard.

### 2. Subtype (500 € per year):

- For each product the subtype shall be identified as part of the certification:
  - a) mat (includes mat, wired mat, roll, felt, mattress and quilt, sheet),
  - b) pipe (pipe section, tube),
  - c) board (includes board, slab and batt) or
  - d) lamella mat (delivery form).

Additional costs for certification, inspection and testing for annual “audit testing” per factory




## Product specifications for technical insulation material

Insulation material	Product specification EN	AGI-Working document	possible voluntary quality mark
Flexible elastomeric foam (FEF)	14304	Q 143 T1	Keymark / VDI
Extruded polystyrene foam (XPS)	14307	Q 133 T2	Keymark / VDI
Rigid polyurethane foam (PUR)	14308	Q 133 T3	Keymark / VDI
Polyisocyanurate foam (PIR)	14308	Q 133 T3	Keymark / VDI
Expanded polystyrene (EPS)	14309	Q 133 T1	Keymark / VDI
Polyethylene foam (PEF)	14313	Q 134	Keymark / VDI
Vacuum Insulation Panel (VIP)	-	-	VDI
Cellular glass (CG)	14305	Q 137	Keymark / VDI
Mineral wool (MW)	14303	Q 132	Keymark / VDI
Phenolic foam (PF)	14314	-	Keymark / VDI
Calcium-magnesium-silicate (CMS)	-	Q 140	VDI
Microporous insulants	-	Q 144	VDI
Calcium silicate (CS)	14306	Q 142	Keymark / VDI
Aerogels	-	-	VDI

## Test frequencies CEN/VDI Keymark according EN 13172:2011 Annex A

Property	Test needed	Test frequency for one product in one plant every
Thermal resistance – Thermal conductivity (Temp.)	Yes	1 year
Thickness	Yes	1 year
Fire behaviour	Yes	<b>2 years</b>
Compression strength	If relevant	1 year
Maximum Service Temperature	If relevant	<b>2 years</b>
Chlorid-Content and pH	If relevant	1 year
Water vapour diffusion resistance	If relevant	1 year

# Difference between CE-mark and CEN/VDI Keymark

CE-mark	CEN/VDI Keymark
	 
<p><b>indication</b> of conformity with relevant European Standard</p>	<p><b>demonstration</b> of conformity with relevant European Standard</p>
<p>Conformity of production process</p>	<p>Product Certification</p>
<p><b>Passport</b> for the EU market</p>	<p><b>Quality mark</b></p>
<p>addresses only the responsible <b>market surveillance authorities</b></p>	<p>addresses <b>users</b> and <b>consumers</b></p>
<p>CE marking is <b>mandatory</b></p>	<p>CEN/VDI Keymark is a <b>voluntary</b> certification mark</p>
<p>may require the intervention of <b>Notified Bodies</b>, but always remains the responsibility of the <b>manufacturer</b></p>	<p>can only be granted by <b>certification bodies</b></p>
<p>System 1,3 or 4</p>	<p>System 1+</p>
<p>report</p>	<p>certificate (valid 1(2) year)</p>
<p>no audit testing</p>	<p>audit testing</p>

## Declared and Design Value summary

System	Thermal conductivity	Buildings	Industry	remarks
	As placed on the market			
CE	Declared	$\lambda_{90/90}$	Limit curve	Mandatory in EU
Keymark VDI-Keymark	Declared	Keymark 1+ EN 13172 Annex A	Limit curve EN 13172 Annex A	Voluntary third party Supervision
	End use conditions in the application			
abZ	Design	Z-23.15.xxxx (limit * 1,05) BRL A part 1	Z-23.14.xxxx Direct measured	Mandatory in Germany
EN ISO 23993	Design	-	Heat loss calculation	Private contracts

## Voluntary Quality assurance - Key benefits



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Ensure a common evaluation of insulation products

Synergy effects to reduce tests related to other surveillance systems

European level of thermal conductivity

The reliable basis for Heat loss calculations and sustainable insulation systems