

## Verleihungs-Urkunde

Die SKZ - TeConA GmbH verleiht der Firma

**JK Vloerverwarming  
Fahrenheitstraat 39  
6716 BR Ede  
Niederlande**

das Recht zum Führen des SKZ - Prüf- und Überwachungszeichens



**A 519**

für nachstehende Kunststoffherzeugnisse

**Fußbodenheizungsrohre  
Rohre aus Polyethylen PE-RT  
mit erhöhter Temperaturstabilität**

nach der SKZ-Prüf- und Überwachungsbestimmung HR 3.35

Mit der Führung des SKZ - Zeichens ist die Verpflichtung verbunden, bei der Herstellung und Prüfung der Erzeugnisse die vorgeschriebenen Bestimmungen einzuhalten.

Gültig bis: 20. Juli 2014

Würzburg, 21. Juli 2009



i. V.

Zertifizierungsstelle



**Inspection report:** 475110/2.1/94563

**Client:** JK Vloerverwarming  
Fahrenheitstraat 39  
NL-6716 BR Ede

**Production plant:** D-40880 Ratingen

**Third party control:** 2<sup>nd</sup> half-year 2010

**Product:** Floor heating pipes  
Pipe PE-RT 14 x 2.0 mm

The exact material designation is available at SKZ - TeConA GmbH.

**SKZ-mark no.:** A 519

**Letter of:** --- **Reference:** ---

**Samples received:** 2010-10-28 **Sampling:** 2010-10-27

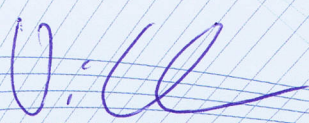
**Test period:** 2011-03-23 to 2011-06-21

**Result:** The requirements according to the test and control specifications HR 3.35: 2005-03 of SKZ - TeConA GmbH are met.

The inspection report comprises 3 pages.

Würzburg, 2011-06-29  
Sz/stei

i. A.

  
Dipl.-Ing. Christian Winkler



i. A.

  
Martin Schütz

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## 1. Inspection scope

The inspection scope complies with the test and control specifications HR 3.35: 2005-03 of SKZ - TeConA GmbH.

## 2. Sampling

The samples were taken by an inspector of SKZ - TeConA GmbH on 27 October 2010 at the production plant in D-40880 Ratingen.

## 3. Results

3.1 Marking: JK FLEXTUBE 14x2 ISO 10508 Cl.4/6bar BRL 5602 DIN 16837 SKZ A519 KOMO K50264 PE-RT Type 0 Nr.1941228190910 meter no. 001

3.2 Colour of the pipes: white with natural core layer

3.3 Surface finish and condition as delivered: without objection

### 3.4 Dimensions

designation		actual value in mm		set value in mm	
		maximum	minimum	maximum	minimum
outside diameter	d <sub>1</sub>	14.2	14.2	14.4	14.0
wall thickness	s <sub>1</sub>	2.2	2.1	2.35	2.05
outside diameter basic pipe	d <sub>1</sub>	13.5	13.5	---	12.9
wall thickness basic pipe	s <sub>1</sub>	1.8	1.7	---	1.45

### 3.5 Heat ageing

designation	unit in	average value	set value
longitudinal reversion	%	0.9	≤ 3.0

### 3.6 Long-term internal pressure test

test temperature in °C	test stress in N/mm <sup>2</sup>	time to failure in h	
		actual value	set value
95	2,5	> 1000	≥ 1000



### 3.7 Material properties

designation	unit in	average value	set value
melt mass-flow rate MFR 190/2.16	g/(10 min)	0.8	0.8 - 1.2
homogeneity - microtome section procedure B	degree	1; type A2	≤ 3
oxygen permeability (optional) <sup>1</sup>	mg/(m <sup>2</sup> ·d)	---	≤ 0.32
thermal stability (OIT) <sup>2</sup>	°C	---	≥ 60

<sup>1</sup> to be decided by the client in the individual case

<sup>2</sup> only in case of negative long-term pressure test

### 4. Assessment of production plant:

Assessment of laboratory staff and device equipment as well as internal production control.  
 Result: without objection



**Inspection report:** 475110/1.1/91226

**Client:** JK Vloerverwarming  
Fahrenheitstraat 39  
NL-6716 BR Ede

**Production plant:** D-40880 Ratingen

**Third party control:** 1<sup>st</sup> half-year 2010

**Product:** Floor heating pipes  
Pipe PE-RT 16 x 2.0 mm

The exact material designation is available at SKZ - TeConA GmbH.

**SKZ-mark no.:** A 519

**Letter of:** --- **Reference:** ---

**Samples received:** 2010-03-22 **Sampling:** 2010-03-17

**Test period:** 2010-04-12 to 2010-05-31

**Result:** The requirements according to the HR 3.35: 2005-03 specification for tests and inspection of SKZ - TeConA GmbH are met.

The inspection report comprises 3 pages.

Würzburg, 2010-06-09  
Wi/stei

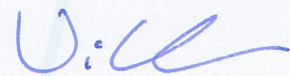
i. V.



Dr.-Ing. Günter Nawroth



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## 1. Inspection scope

The inspection scope complies with the HR 3.35: 2005-03 specification for tests and inspection of SKZ - TeConA GmbH.

## 2. Sampling

The samples were taken by an inspector of SKZ - TeConA GmbH on 17 March 2010 at the production plant in D-40880 Ratingen.

## 3. Results

3.1 Marking: JK FLEXTUBE 16x2 ISO 10508 CI4/6bar BRL 5602 DIN 16837 SKZ A519 KOMO K50264 PE-RT Type 0 19404281009

3.2 Colour of the pipes: blue with natural core layer

3.3 Surface finish and condition as delivered: without objection

### 3.4 Dimensions

designation		actual value in mm		set value in mm	
		maximum	minimum	maximum	minimum
outside diameter	d <sub>1</sub>	16.3	16.2	16.4	16.0
wall thickness	s <sub>1</sub>	2.2	2.1	2.35	2.05
outside diameter basic pipe	d <sub>1</sub>	15.5	15.5	---	14.9
wall thickness basic pipe	s <sub>1</sub>	1.8	1.6	---	1.45

### 3.5 Heat ageing

designation	unit in	average value	set value
longitudinal reversion	%	0.9	≤ 3.0

### 3.6 Long-term internal pressure test

test temperature in °C	test stress in N/mm <sup>2</sup>	time to failure in h	
		actual value	set value
95	2.5	> 1000	≥ 1000



### 3.7 Material properties

designation	unit in	average value	set value
melt mass-flow rate MFR 190/2.16 granulate	g/(10 min)	0.73 <sup>1</sup>	---
melt mass-flow rate MFR 190/2.16 pipe	g/(10 min)	0.70	---
change granulate - pipe	%	4.1	≤ 20
homogeneity - microtome section procedure B	degree	0.8; type B	≤ 3.0
oxygen permeability (optional) <sup>2</sup>	mg/(m <sup>2</sup> d)	---	---
thermal stability (OIT) <sup>3</sup>	°C	---	---

<sup>1</sup> was determined by the producer

<sup>2</sup> to be decided by the client in the individual case

<sup>3</sup> only in case of negative long-term pressure test

### 4. Assessment of production plant:

Assessment of laboratory staff and device equipment as well as internal production control.  
 Result: without objection