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## Technical Report No.

**713145456**

dated

**12.11.2018**

Client: Versapak Europe GmbH  
Dieselstraße 12  
42781 Haan

Manufacturer and / or location of manufacturing: see client

Unit under test (UUT): Laboratory cooling bag BLD1; BLDK; PYB1; PYB2; PYB3

Test specification: Temperature test to DIN EN 60068-2-1: 2008  
Temperature test to DIN EN 60068-2-2: 2008

Test scope: Stress of the UUT according the under position 3 detailed test specification and check of the condition respectively the functional capability during and after the test.  
Verification of suitability for intended application according the under position 3 detailed test specification

Test result: The units under test were equipped following the manufactures instructions.  
The test samples exceed the specified temperature limits in all 5 laboratory cooling bags before the specified time of 12 h at 35°C and 30h at 22°C (see notes position 5 - test sequence).

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Accredited Test Laboratory

Date of issue: 12.11.2018

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Report No.: 713145456

Page 1 to 10

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## Table of content

1	Unit under test (UUT) .....	3
2	Order.....	3
2.1	Date of order, initial of client .....	3
2.2	Receipt of UUT.....	3
2.3	Reconsignment of UUT .....	3
3	Test specification.....	4
3.1	Temperature test 1 .....	4
3.2	Temperature test 2 .....	4
4	Test equipment .....	4
5	Test sequence.....	5
6	Legend of measuring diagrams .....	5
7	Test documentation .....	6
7.1	Measuring diagrams of the temperature test 1 .....	6
7.2	Measuring diagrams of the temperature test 2 .....	7
8	Photo documentation .....	8



## 1 Unit under test (UUT)

The units under test were 5 laboratory cooling bags equipped with samples, thermal barriers and cooling packs following the manufacturers instruction.

The goal of the test is to determine the temperatures of the samples in the bags during the specified ambient temperatures.

The samples shall not exceed the temperature of 8°C during the test.

The temperature on the samples were measured with temperature sensors.

UUT No.	Type	Cooling packs	Accessories	Samples 0,5l filled with water
1	BLD1	800g (2 x 400g)	TB 250, SFB Gr.S +Klemme	2
2	BLDK	1600g (2 x 600g + 1 x 400g)	TB 250, SFB Gr.S +Klemme	6
3	PYB1	950g (1 x 950g)	TB 250, SFB Gr.S +Klemme	3
4	PYB2	2250g (3 x 750g)	TB 650, SFB Gr.M +Klemme	10
5	PYB3	3300g (3 x 1100g)	TB 650+250, SFB Gr.L +Klemme	14

Before the test the thermal barriers and the samples were cooled min. 24h at 4°C.

The cooling packs were cooled min. 24h at -18°C

## 2 Order

### 2.1 Date of order, initial of client

Company Versapak Europe GmbH orders from TÜV SÜD Product Service GmbH with order sheet dated 27.09.2018, to test a.m. UUT.

### 2.2 Receipt of UUT

The samples were delivered by the client on 29.10.2018.

### 2.3 Reconsignment of UUT

At the time of writing this report, the units under test were still in our laboratory.



### 3 Test specification

#### 3.1 Temperature test 1

Temperature: 35°C  
Test duration: 12h

Temperature samples 4°C  
Thermal barrier 4°C  
Cooling packs -18°C

#### 3.2 Temperature test 2

Temperature: 22°C  
Test duration: 30h

Temperature samples 4°C  
Thermal barrier 4°C  
Cooling packs -18°C

### 4 Test equipment

Equipment	Type	Ser. No.	Manufacturer	Calibrated until
Climatic Chamber K3	PL-4 KPH	14020550	Espec	07/2019
Climatic Chamber K10	PL-3J	15005221	Espec	10/2020
Climatic Chamber K9	PL-3J	15005229	Espec	10/2020
Data logger	34970A 1 x 34901A	MY41003777, MY41183381; 07-10/28-14-001	Agilent	07/2020

All measuring equipment is calibrated regularly according the calibration instructions of TÜV SÜD PRODUCT SERVICE GmbH. All calibrations are traced back to national standards.



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## 5 Test sequence

Test date: from 03.11.2018 to 09.11.2018

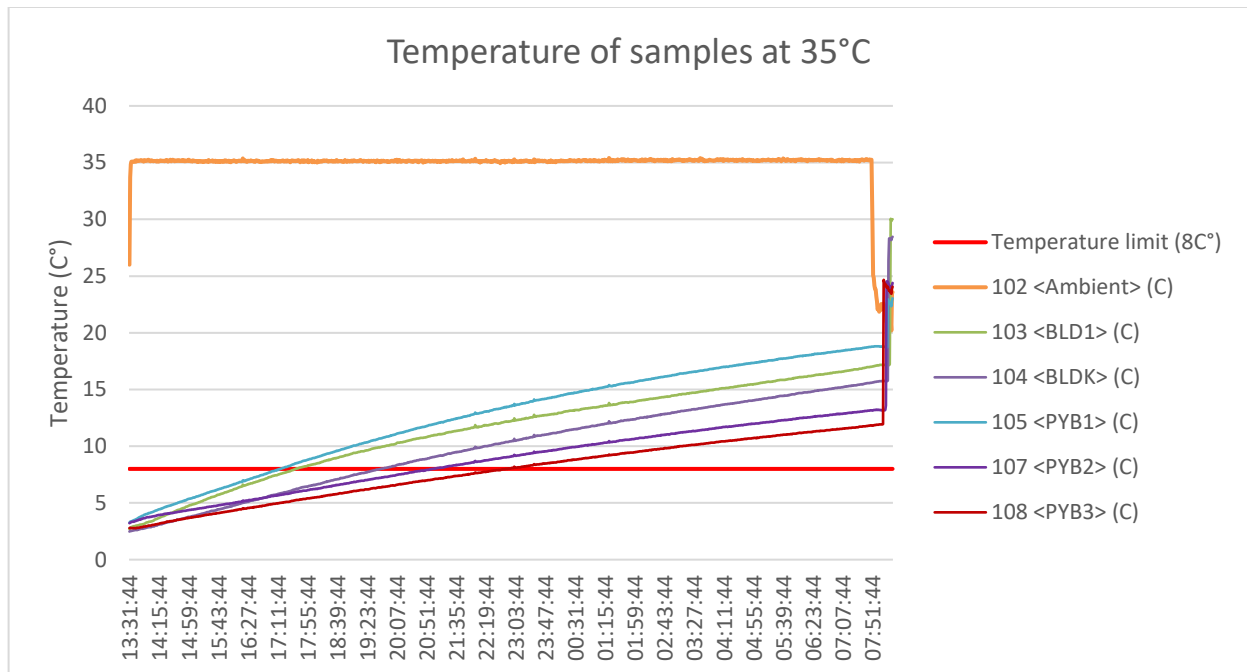
No.	Test specification	Period	Notes
1	Temperature test	03.11.2018 to 06.11.2018	
1.1	Conditioning	03.11.2018 to 05.11.2018	Samples and thermal barriers at 4°C Cooling packs at -18°C
1.2	Assembling and test	05.11.2018 to 06.11.2018	Ambient temperature 35°C Temperature limit for samples 8°C  BLD1: Exceeding temperature limit after 4h 7min BLDK: Exceeding temperature limit after 6h 13min PYB1: Exceeding temperature limit after 3h 44min PYB2: Exceeding temperature limit after 7h 28min PYB3: Exceeding temperature limit after 9h 18min
2	Temperature test	07.11.2018 to 09.11.2018	
2.1	Conditioning	06.11.2018 to 07.11.2018	Samples and thermal barriers at 4°C Cooling packs at -18°C
2.2	Assembling and test	07.11.2018 to 09.11.2018	Ambient temperature 22°C Temperature limit for samples 8°C  BLD1: Exceeding temperature limit after 12h 23min BLDK: Exceeding temperature limit after 10h 19min PYB1: Exceeding temperature limit after 7h 46min PYB2: Exceeding temperature limit after 15h 50min PYB3: Exceeding temperature limit after 20h 11min

## 6 Legend of measuring diagrams

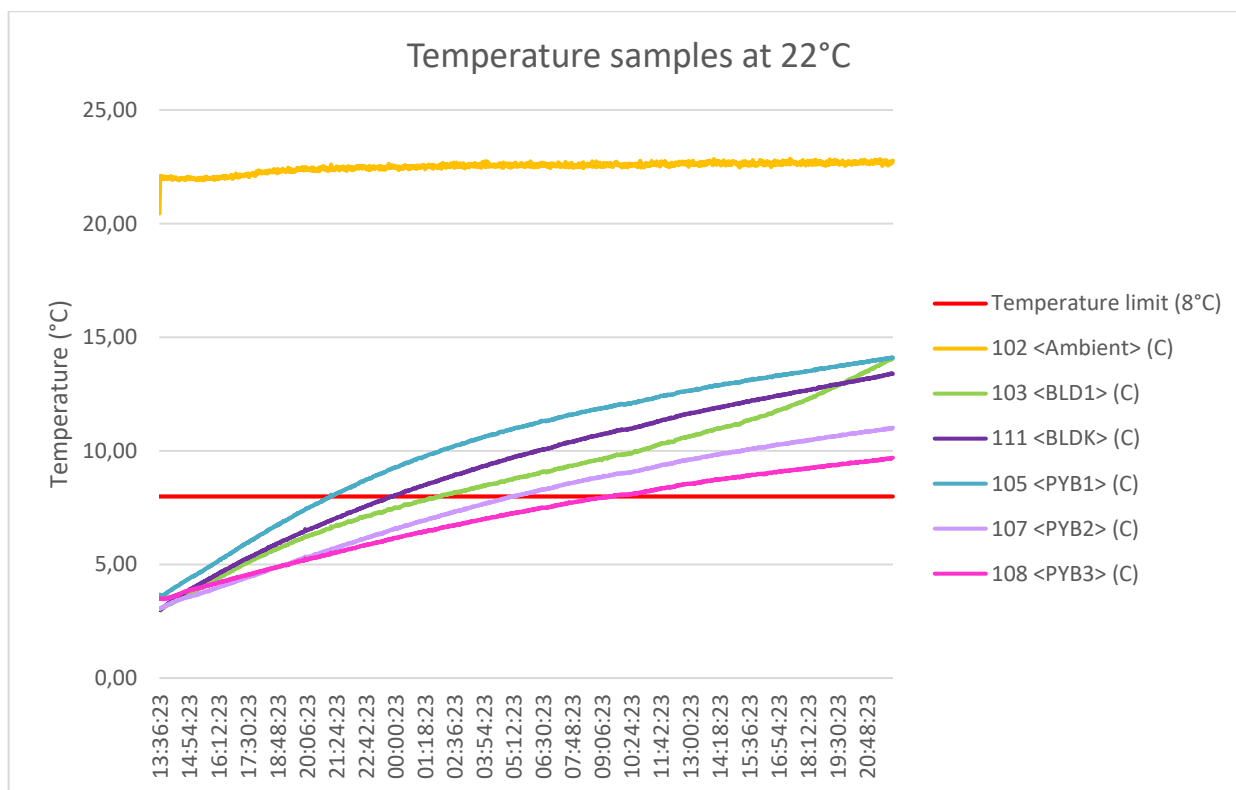
N.a.

## 7 Test documentation

### 7.1 Measuring diagrams of the temperature test 1



## 7.2 Measuring diagrams of the temperature test 2



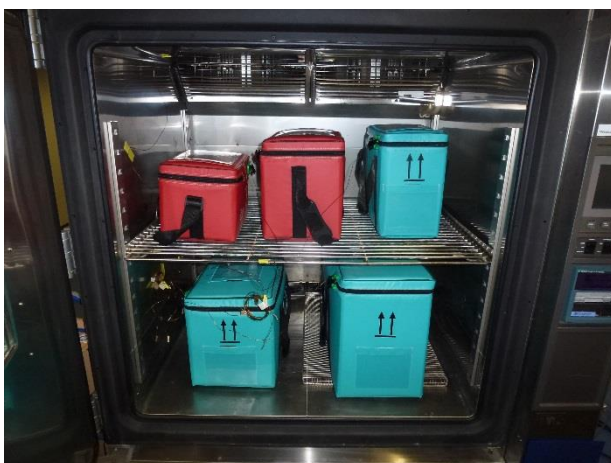
## 8 Photo documentation



1. Conditioning of samples and thermal barriers at 4°C



2. Conditioning of cooling packs at -18°C



3. Test setup in Temperature chamber



4. Assembling BCD1





5. Assembling BCD1



6. Assembling BLDK



7. Assembling BLDK



8. Assembling PYB1



9. Assembling PYB1



10. Assembling PYB2



11. Assembling PYB2



12. Assembling PYB3



13. Assembling PYB3



14. Thermocouple at samples

Verified  
Signature

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Technical Certifier

Edited  
Signature

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