

TEST REPORT

N° P-21.249B-VAL

REPORT DATE: 01/12/2021

SUBJECT: Validation report according to AFNOR S99-700 Summer cycle serie 15-25°

BY ORDER OF: **Corkconcept SA**
Rue Zénobe Gramme 39
4821 Andrimont
Belgium

The results of this report are exclusively related to the submitted and tested items as received.
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Recognition:



Len D'heygere
Analyst - Consultant
Physical Testing



An Van Geite
Head of Department
Physical Testing

1. Received samples

Receiving date of the samples: 22/07/2021

Contact person: Alexandre Narinx
E-mail contact person: anarinx@corkconcept.com

Description of the received samples: 3 isothermal boxes

1 isothermal boxes / type: 4L96HG; 13L96HG; 27L96HG
Cooling elements: PCM+22° 1700GR



The samples were taken and sent by CORKCONCEPT to IBE-BVI.

2. Preconditioning

The samples were conditioned as described in 4. Results

3. Executed tests

Testing date: 17/08-21/08/2021
Executor: Len D'heygere

climatic test 15-25°; according to AFNOR NF S99-700, cycle ST-96-b

Cycle N° ST-96-b:

| Sequence | Test Time (h) | Temperature (°C) |
|-----------------|----------------------|-------------------------|
| 1 | 3 | 22 |
| 2 | 4 | 25 |
| 3 | 9 | 20 |
| 4 | 8 | 25 |
| 5 | 4 | 32 |
| 6 | 3 | 25 |
| 7 | 9 | 20 |
| 8 | 8 | 25 |
| 9 | 3 | 22 |
| 10 | 4 | 25 |
| 11 | 9 | 20 |
| 12 | 8 | 25 |
| 13 | 4 | 32 |
| 14 | 3 | 25 |
| 15 | 9 | 20 |
| 16 | 8 | 25 |

4. Results

4.1. Protocol Preconditioning "Configuration normal Usage Hiver Stricte"

- PCM-packs -
 - ✓ Min. 72h at (23 ± 2)°C
- Isothermal box:
 - ✓ Min. 72h at (+18±2)°C
- Product (empty box inside):
 - ✓ Min. 24h at (+18 ± 2)°C

4.2. Protocol preparation packaging

Boxes are prepared according to the protocol from the Customer (see Annex)
The pictures below give an overview of the set-up of the boxes, all boxes are prepared according to the same filling pattern.
The climatic test is started immediately after preparation.

The pictures below give an overview of the set-up of the box 27L96HG.
All boxes are prepared according to the same filling pattern.
The logger is placed in the middle of the empty product box.

Box 27L96HG



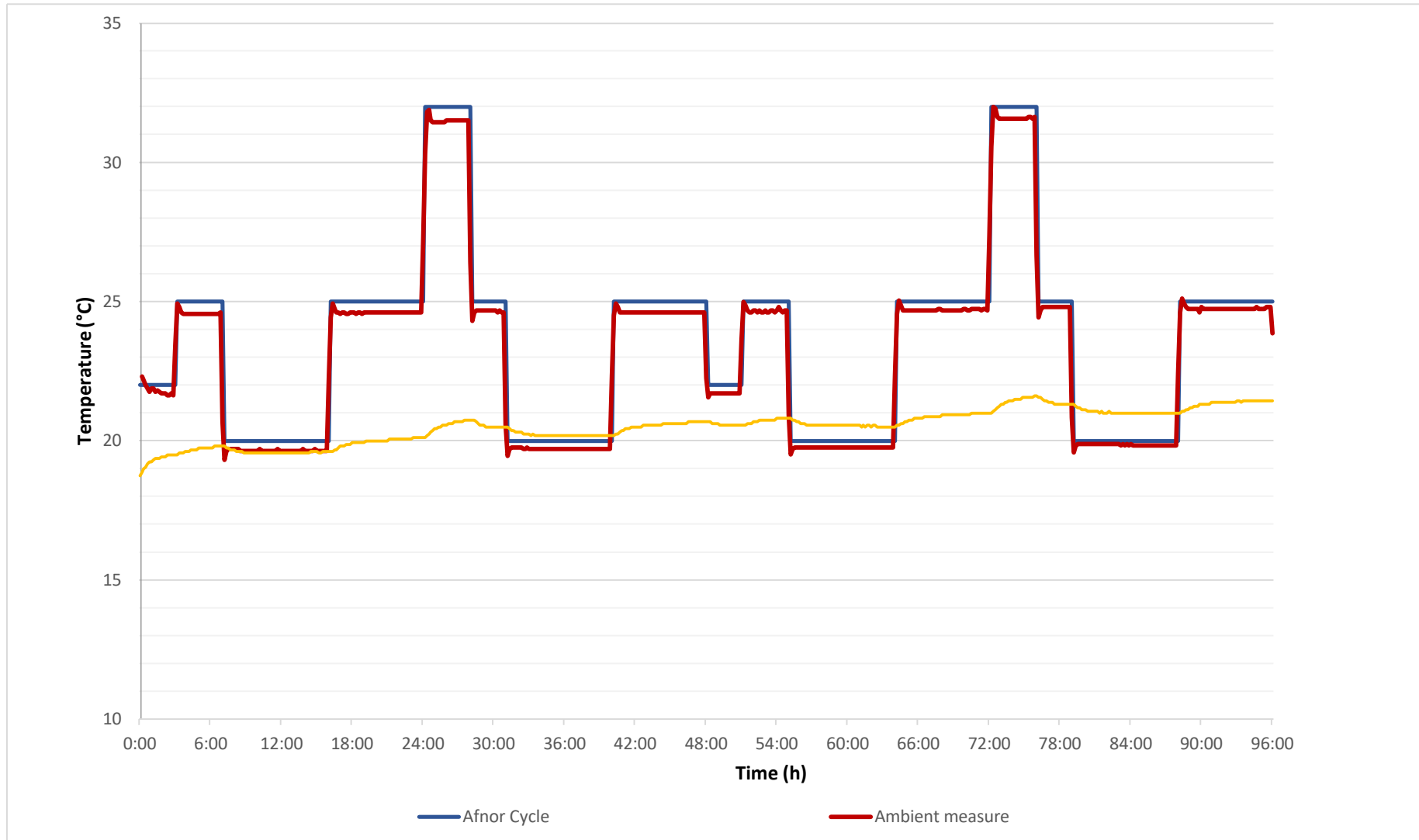
The climatic test is started immediately after preparation.

Used Equipment: Climatic Room GH-023
Manufacturer: CTS
Type: TW-40/15
Serial number: 129606
Range: -40°C ~ +40°C

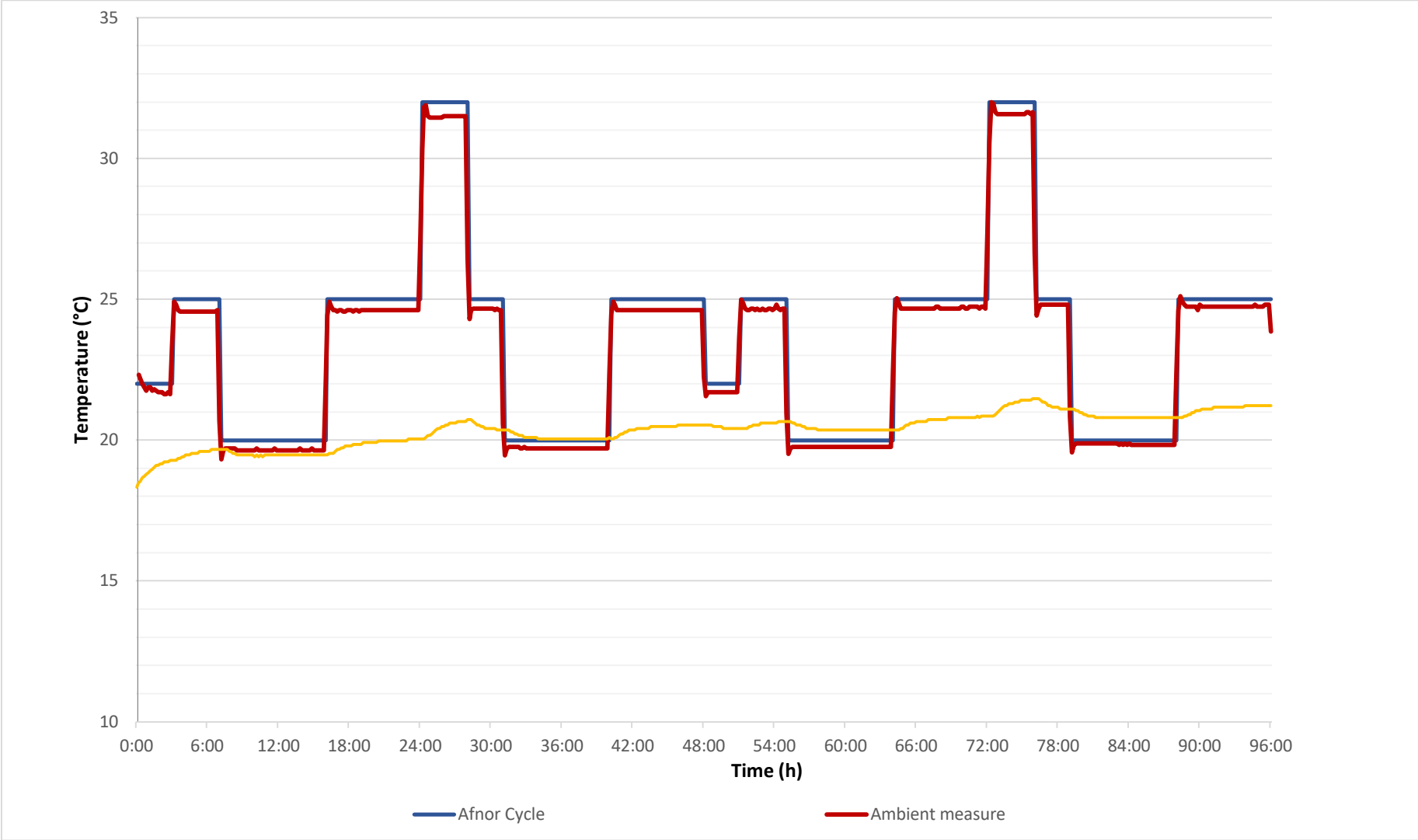
Temperature is measured in the centre of the box.

Loggers: GL-155 Waranet Puces:
TP025 for ambient temperature
TL055 for 4L96HG
TL056 for 13L96HG
TL057 for 27L96HG

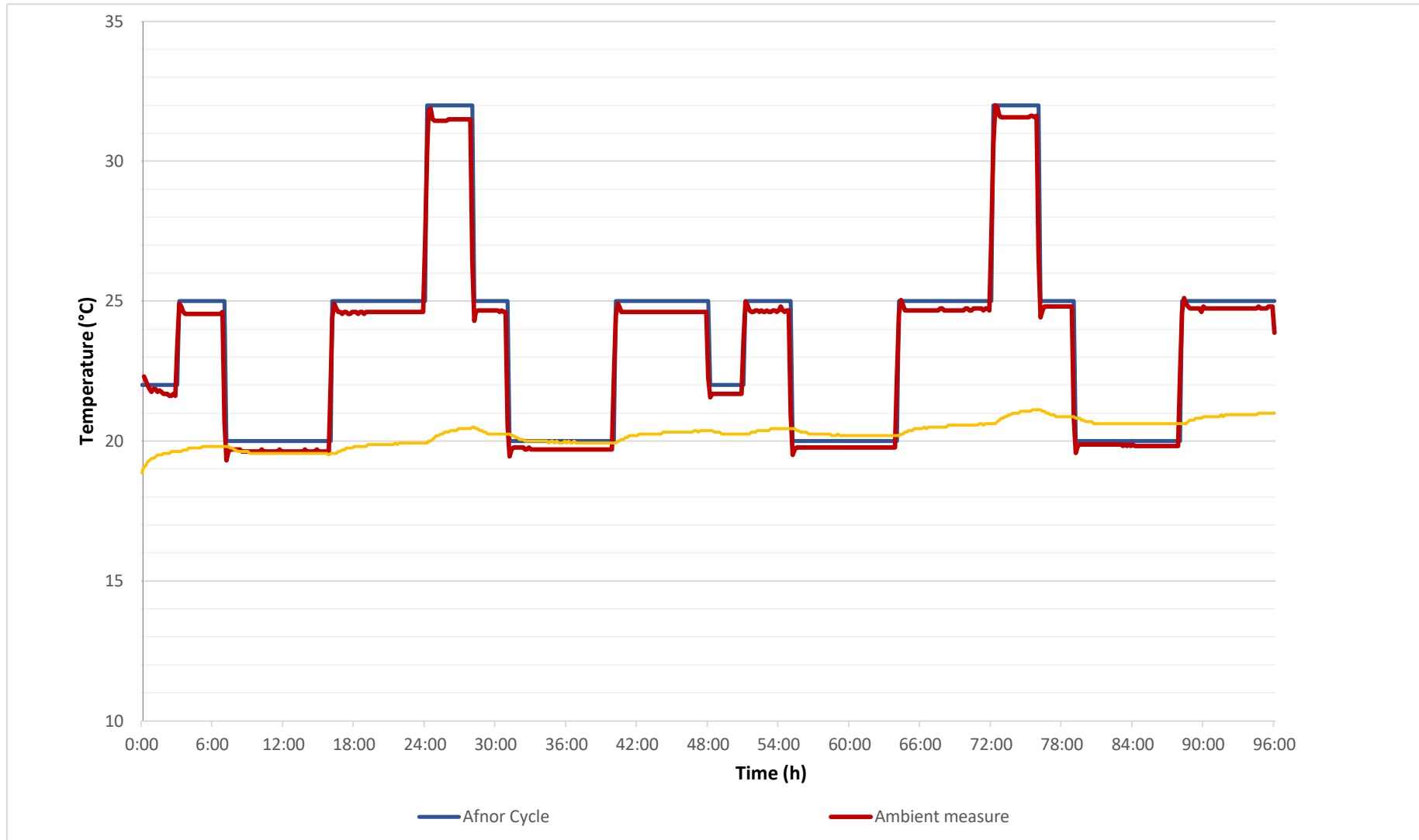
4.3. Graph 4L96HG



4.4. Graph 13L96HG



4.5. Graph 27L96HG



The graphs above are the summary of logged data. All data is shared in Excel file with customer – "Corkconcept P-21.249A Validation Winter – data".

During the AFNOR NF S99-700, cycle ST-96-b samples 4L96HG, 13L96HG and 27L96HG are between 15-25°C.

5. Conclusion

Based on the results obtained from the tested material 4L96HG, 13L96HG and 27L96HG are validated for the normal winter configuration in accordance with AFNOR NF S99-700, cycle ST-96-b.



Len D'heygere
Analyst – Consultant
Physical Testing

Annex A – Protocol

Protocole d'utilisation simplifié
GELS PCM



Protocole d'utilisation simplifié
GELS PCM



Température : 15°C / 25°C

1) Conditionnement des gels PCM

Les gels PCM 1700 gr (capuchons rouges) doivent être stockés horizontalement sur des étagères, s'ils sont laissés dans leur caisse d'origine, le couvercle doit être déchiré.

Les gels PCM 1700 gr doivent être séparés pour être conditionnés

USAGE MIXTE

USAGE HIVER STRICTE

USAGE ETE STRICTE

↓



+20°C
Min 1 semaine

↓



+23°C
Min 1 semaine

↓



+17°C
Min 1 semaine

Remarque

Il existe deux configurations : normale et moins puissante.
La configuration moins puissante ne s'utilise que pour des températures comprises entre 0° et 35° C.

2) Temps d'attente avant utilisation des gels

Les gels PCM peuvent être utilisés directement en sortie de réfrigérateur.

Etapes de préparation
Configuration normale (ex: modèle boîte 13L)

