

**Economic Commission for Europe**

**Inland Transport Committee**

**Working Party on the Transport of Perishable Foodstuffs**

**14 July 2014**

**Seventieth session**

Geneva, 7-10 October 2014

Item 3 (a) of the provisional agenda

**Activities of other international organizations**

**dealing with issues of interest to the Working Party**

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**Report of the IIR CERTE subcommission meeting  
(Padua, 12 June 2014)**

**Transmitted by the International Institute of Refrigeration  
(IIR)**



**IIR Sub-Commission D2 “CERTE” Meeting  
Italy, Padua 12<sup>th</sup> June 2014  
Approved Minutes**

## **1.0 Welcome and Presentation**

The Chairman Mr Eric Devin welcomed the participants (24 in total from 11 contracting parties). The attendance list is given at the end of this document.

## **2.0 Approval of Agenda**

The proposed agenda was adopted without any additional amendments.

## **3.0 Apologies**

The chairman informed the participants that he had received the following apologies:

- Mr Zdenek Kaiser (Czech Republic)
- Mr Andreas Klotz (Germany)
- Mr Christopher Smith (UNECE)
- Mr Leo Lukasse (Netherlands)
- Mr Gerald Cavalier (France)
- Mr Eduardo Muñoz (Spain)

## **4.0 Appointment of Officers**

Mr Eric Devin (Chairman) nomination was pronounced by scientific committee of IIF as chairman.

### **4.1 Secretary for the Meeting**

Mr Tobias Mynott (United Kingdom) was the secretary for the meeting.

### **4.2 Representation from CERTE on the UN WP11 meeting**

The chairman, Mr Eric Devin (France) indicated that he would be able to represent CERTE at the UN WP11 meeting in October 2014 if so requested. There was general agreement.

## **5.0 Minutes of the CERTE Meeting in Paris 2013 and Amendments**

Minutes of the last CERTE meeting were approved on the 30<sup>th</sup> June 2013 and were submitted to the 69<sup>th</sup> session of WP11 as an informal document (INF4).

## **6.0 Information**

### **6.1 IIR**

Didier Coulomb was unable to attend due to the annual STC meeting being held in Paris at the same time as CERTE. Richard Lawton gave a brief outline on the IIR activities.

- CERTE was still the most active of all the commissions
- 3rd IIR Conference on Sustainability and the Cold Chain (23<sup>rd</sup> to 25<sup>th</sup> June 2014)
- ICR 2015 - 24th IIR International Congress of Refrigeration (16<sup>th</sup> to 22<sup>nd</sup> August 2015. Yokohama, Japan) deadline for abstracts 10<sup>th</sup> October 2014

### **6.2 Transfrigoroute International**

Mr Grealy was representing Transfrigoroute International (TI) and the following topics were discussed:

Once again 2012-14 was a very busy period for TI with activities in four main areas.

#### 1) F- Gases

Since the introduction of the F-Gas Regulation in 2006, TI has supported the objectives of the original regulation believing that the original concepts of annual leak checking by certified technicians together with the recording of the usage of refrigerant would add professionalism to our industry, reduce costs for the transporters and demonstrate to the politicians and public that the temperature controlled transport industry had made significant strides in leak reduction.

However the scope of the revised regulation which comes into effect in 2015 has presented both the manufacturers and transports with different technical and financial challenges in the coming years. While no outright bans have been imposed on F-gases, the industry faces possible challenges on the service and maintenance front. The service ban of 2020 on using new refrigerant with a charge equivalent to 40t / CO<sub>2</sub> is largely outside the scope of most transport refrigeration systems, with the possible exception of some large multi-temperature trailer units. It is clear that high GWP refrigerants such as R404A will have a limited future, according to DG Clima.

In addition to the technical challenges there may be significant cost implications in servicing transport refrigeration systems with the proposed increases due to a progressive tax system on all F-gases. While France has abandoned this idea, Spain has already introduced a tax of €25 / kg on R404a. This will rise to €76 /kg in 2016.

Transporters need to find commercially acceptable and technically sound solutions for their existing equipment.

The next few years should be very interesting.

## 2) NRMM Non-Road Mechanical Machines

To-date independent some of the CI or SI engines used in the transport refrigeration equipment have had to conform to emission levels which are not in any way related to Euro norms provided their power output exceeded 19kW.

The net effect of this old regulation means that only large 4-cylinder engines used in semi-trailer units have been subjected to any emission regulations. Smaller engines used in truck temperature controlled equipment were not regulated.

DG Enterprise has decided that those engines used for non-road propulsion use should now be regulated. Engines with outputs from 8-11 and 11-19kW will be subject to new regulations starting in 2019. The larger engines in the range from 19-36kW will have a stricter new set of emission limits beginning in 2020. Like their predecessors, the new emission limits bear no relationship to *Euro 6* and permit emissions which are multiples of those allowed under the *Euro 6* limits. There is growing concern about the small diameter particulate matter emissions based on a recent World Health Organisation report linking these emissions to cancer.

The challenge facing the transport refrigeration industry is to find, test and approve suitable engines with more modern, high pressure common rail injection technology which will meet these limits and fit in the space provided under the current weights and dimensions regulations for semi-trailers.

## 3) ATP and the application of multi-temperature / multi-compartment (MT) testing.

With the introduction of MT testing under the ATP in September 2013, TI has continued to work on the development of the calculation tool which was requested by the industry, the body builders and the ATP test stations.

Unfortunately feedback from the testing of the beta version of the tool was slow in coming back. TI would like to sincerely thank CEMAFROID, Mr Cavalier, Mr Devin and their team for their positive inputs which have now been included in the latest version which is available. TI would also like to thank Mr. Klotz of TUEV Sued for his comments.

The next step for TI is to develop the concept of the application of the ATP rules, perhaps under another guise, to national transport. TI believes that this is a logical step as most MT / multi-compartment vehicles are used for urban, regional and national distribution. Work is currently being undertaken under the auspices of CEN in this area and TI believes that there is no point in replicating this work within TI as most of the delegates to the CEN meetings are also TI members.

#### 4) Weights and dimensions.

The recent review of the EU directive on weights and dimensions did not yield any good news for TI or its operating members. The official policy of TI was to ask for an additional 200mm in the length of semi-trailers to allow the transport of 33 Euro pallets in a two temperature configuration. The additional space was to be used for more efficient airflow for better temperature management with an intermediate bulkhead in place. Instead, the EU concentrated on additional length for aerodynamic devices with a view to reducing fuel consumption. It remains to be seen if these measures will deliver the savings in a practical way.

In the meantime TI vowed to continue its work on energy related issues.

#### 5) PIEK

There is a body of opinion within TI that the application of PIEK noise reduction limits may be achieved by lowering the rated cooling capacity of refrigeration systems below the minimum requirements under ATP regulations. TI has, and will continue to seek a meeting with the PIEK officials in Holland to discuss this matter and seek clarification on the scientific basis of the tests applied. TI supports the concept of night time deliveries, increasing the flexibility and efficiency of distribution fleets provided that the basic purpose of protecting the perishable goods carried is completely respected. Ideally TI would prefer a pan European standard on noise emissions rather than the piecemeal application of the PIEK standard by municipalities. Repeatability and test conditions must be respected.

The technical advisory council of TI has a new mandate which will end in 2017. The vice presidents are Andre Stumpf of Carrier Transicold Europe and Oliver Fontaine of Schmitz Cargobull. TI would like to thank Alois Hummel of Krone for his years of dedicated work as vice president. Alois is here present and continues to bring his immense experience to the work of the CCT and TI in general.

TI wished to thank Mr Devin and all his colleagues and old friends in the ATP test stations for their kind invitation to this meeting in the hope that it will be a positive and fruitful meeting for all in the interests of the refrigerated transporters and the health of the general public whose lives our members protect on a daily basis.

Comments:

It was in general agreement that we should not at present, formalise a paper concerning PEAK. TI would continue to work on this subject and was disappointed that CERTE are not concerned at present.

### **6.3 CEN**

A short update was given by Mr Richard Lawton (United Kingdom) on the latest updates to the CEN standards.

EN16440 part 1 has been published and they are currently working on part 2.

EN12830 is currently still being revised, the next meeting would be held in Paris.

The following comments were made:

Mr Devin (France): we need a comparison between CEN and ATP to be submitted to the next WP11.

Mr Stumpf (Carrier): encourage more countries to join CEN.

### **7.0 Information from UN WP 11 Meeting October 2013**

The chairman Mr Telmo Nobre was in attendance, he made the following comments:

- The 69<sup>th</sup> session consisted of 21 working documents and 13 informal documents, half of which had nothing to do with WP11.
- 48 contracting parties.

The 69<sup>th</sup> session saw six proposals adopted. Adopted and rejected proposals are summarised below:

#### **Adopted**

Germany: Acceptable minor changes  
Secretariat: Miscellaneous amendments  
Russia: Heated equipment  
Belgium: Clarifying Annex 1, Appendix 1 (part c)  
France: Correction to text (wording in French transcript)  
Italy: Correction to text (test standard)  
Italy: ATP certificate (more details about the body)  
Germany: Acceptable changes to equipment (handbook)

## Rejected

- Netherlands: Curtain-sided trailers (amend)
- France: K values of in-service vehicles (amend)
- UK: Measurement of internal panel vans (amend)
- Netherlands: liquefied gas systems
- France: Re-certification of 6 and 9 year-old small vans
- France: Retesting of multi-compartment equipment
- Portugal: Distinguishing marks for multi compartment vehicles
- France: Distinguishing marks for multi compartment vehicles
- Netherlands: Distinguishing marks for multi compartment vehicles
- Russia: Combining annexes 2 and 3
- Russia: Definition of perishable foodstuffs
- France: Extend scope of ATP to national
- France: Amending temperature class of ATP
- Netherlands: More information from manufacturers (Amend)
- Italy: Amend title (6.1, annex 1, appendix 1)
- France: Proposal on testing liquefied gas systems
- Netherlands: Test standards
- France: Modifications table (Handbook)
- France: Explanatory comments and table (Handbook)

The 70<sup>th</sup> meeting is currently scheduled for the 7<sup>th</sup> to 10<sup>th</sup> October 2014. The deadline for submission of documents is the 4<sup>th</sup> July 2014.

It was also noted that two important recommendations were raised at the 76<sup>th</sup> meeting of the Inland Transport Committee. They were as follows:

The committee noted a strong discussion from Russia concerning the scope of ATP.

They also drew attention to addressing two key strategic issues in WP11; they were to the introduction of the definition of perishable foodstuffs by amending article 3 of ATP and also extending the scope of ATP to cover all perishable foodstuffs and not only those referred to in annexes 2 and 3 (not mandatory but just a recommendation).

Other issues:

Mr Nobre also drew attention to an old issue regarding fake ATP certificates; there was a proposal many years ago to produce a small international database. This was rejected (WP29 have produced a database this year which can be found in the following document ECE/Trans/2014/12), maybe CERTE can look into this matter again at future meetings.

## **8.0 Discussions about ATP Implementation in the Field of Testing New Vehicles, Type Approvals and Certification**

### **8.1 Testing Methods**

#### **8.1.1 References to Standards in ATP**

There was a request from WP11 to check the references to test standards that are currently in the ATP agreement.

The chairman and secretary of CERTE circulated a list of all the test standards for discussion. It was suggested that with the help of other contracting parties that we could propose an informal document to be submitted to WP11.

It was also noted from Germany that we should check that there are no dates stated in the test standards mentioned in ATP.

#### **8.1.2 External Surface Area Measurement of Panel Vans**

WP11 rejected the UK proposal; Portugal asked for statistical figures to be submitted to support this proposal.

The UK presented a paper with statistical information and the following comments were made:

Mr Schrempf (Germany): all three methods were good; perhaps you could have a 1% and 2% tolerance when using methods 2 and 3 respectively.

Mr Raschle (Germany): would you consider air to be an insulator when concerning panel vans.

Mr Nobre (Portugal): options 1 and 2 are not possible, option 3 would be the best, in order to check the dimensions they drill a couple of holes to clarify the dimensions (notifying the body builder prior to testing).

Mr Rossi (Italy) pointed out that they use a combination of method 1 and 2.

Miss Krebs (Germany): when submitting a type approval you need the manufacturer's drawings, you also need to review the type test report concerning the dimensions.

It was suggested that we prepare a new proposal with more information. We need to also review the test report to reflect a panel van.



### **8.1.3 Airflow**

A UK proposal to specify the amount of airflow required for ATP with regards to airflow tests. The UK delegation wanted to gauge the response on whether it should submit a proposal for the 70<sup>th</sup> session next year.

It was suggested that a revised proposal should be submitted to WP11.

### **8.1.4 Small Containers**

No other matters were raised for discussion.

### **8.1.5 Measuring Heating Capacity**

There was no paper on this issue but it was noted that it's currently being discussed in CEN.

The following comments were made:

Mr Raschle (Germany): CEN needs to have it approved and published before we can consider it for ATP.

Miss Krebs (Germany): perhaps we could produce an informal document on this subject at the next WP11 meeting.

### **8.1.6 Kit Bodies and Certification of Integrated Insulated Bodies**

No other matters were raised for discussion.

### **8.1.7 Uncertainties and Metrology Aspects in Annex 1 Appendix 2**

No other matters were raised for discussion.

### **8.1.8 Exchange of Information about Accreditation According ISO 17025 Standard, Peer Assessment and Inter-comparison**

The round robin comparison test was still on-going, it was agreed that a 6 year old vehicle would be more suitable. This vehicle should be a panel van or a trailer which would make transport between the test stations more easy; Mr Joe Grealy will ask on behalf of CERTE for a small van.

It was agreed that Mr Raschle (Germany) would write a test procedure; this procedure should provide some guidance on how the round robin is to be done in detail (purpose of test, financing, transport of test vehicle, scope of testing, documentation, presentation of results etc). This will then be

distributed to all test stations that would participate in the round robin tests. The results would then be presented at the CERTE meeting from each test station.

We could then produce an informal document for the WP11 meeting in 2015.

### **8.1.9 Any Other Business**

No other matters were raised for discussion

## **8.2 Contributions Concerning Test Report, Utilisation, Type Examination Certificates, Marking Rules and ATP Plate of Conformity**

### **8.2.1 Decals for Multi-Compartment Vehicles**

TI proposed using a simple marking system by using the letter 'M' after FRC or FNA. This was the same proposal by Mr Raschle (Germany) but they suggested an accompanying document showing all the multi-compartment configurations.

The following comments were made:

Mr Nobre (Portugal): the plate has same value as certificate; therefore the layout must be as simple as possible. Road checks are not obliged to have supporting documentation.

Mr Schrempf (Germany): temperature is our main concern not the documentation.

Mr Devin (France): perhaps CERTE is not the best organisation to discuss this topic.

Mr Raschle (Germany): should be as simple as possible, you also need a supplementary document to show the different configurations.

Mr Nobre (Portugal): the majority of multi-compartments are only two.

Mr Grealy (TI): there was an increase in police checks and the decals should be as simple as possible to avoid unnecessary delay.

After a lengthy discussion, CERTE was not able to give a consensus to support any proposals regarding this matter.

### **8.2.2 Information to be Supplied by Manufacturers for ATP Type Approval Testing**

The was no paper concerning this issue, but it was pointed out by Mr Joe Grealy (TI) that there was no reason to increase or decrease the information supplied by the manufacturer for ATP testing.

### **8.2.3 Calculation Tool for Multi Temperature Equipment**

There was no paper concerning this point, it is proposed that that the tool will be given to every test station and competent authority as soon as possible.

Transfrigoroute International will circulate a link where the competent authorities and test stations are able to download the tool; the tool will be updated on an annual basis.

The following comments were made:

Mr Schrempf (Germany): in most countries the ATP certificate is issued by the competent authorities, they need to use an official licenced program.

Mr Grealy (TI): the tool is designed to help the industry for MT, this is a simple tool and we don't have the money to develop a proper licensed tool.

Mr Raschle (Germany): any competent authorities is free to use and validate the tool if they so wish.

Mr Devin (France): the first step is to have a tool available to use and then to validate it. If WP11 want to develop their own tool they can. It's the choice of each country.

Mr Grealy (TI): at present the tool is free to use.

Mr Nobre (Portugal): The best way would be for each test station to validate the tool and inform WP11.

It was agreed that TI would supply an operating manual for the tool, once distributed

### **8.2.4 Acceptable Changes to Insulated Bodies, Application of the Provision 6, C of the Annexe 1 Appendix 1 of ATP**

This was amended at the last WP11 meeting

## **8.2.5 Revision of TI Position on k-Values for Fixed Intermediate Bulkheads in Multi-Compartment and Multi-Temperature Vehicles**

TI informed the CERTE group that they would re-submit a document for the next meeting.

## **8.3 Other Matters**

### **8.3.1 Utilising Multi-Temperature Refrigeration Test Reports Issued before 23<sup>rd</sup> September 2013**

Finland asked whether it was possible to use any or some test reports dated before the 23<sup>rd</sup> September 2013 for issuing multi-temperature ATP certificates, also would it be possible to use such test reports only if testing laboratory has issued an annex to the report stating that provisions entered into force on the 23<sup>rd</sup> September 2013 are fulfilled.

The following comments were made:

Mr Schrempf (Germany): this is for WP11 to decide.

Mr Dahl (Denmark): this is for competent authorities to decide, they would contact the authorities from which the test report was issued for confirmation.

### **8.3.2 Proposal to Correct Annex1, Appendix 2, Paragraph 8.3.1**

This was discussed at the last WP11 meeting, it was suggested that they submit an official proposal to the next WP11 meeting.

The following comments were made:

Mr Nobre (Portugal): be very clear when submitting your proposal, perhaps make an example in the new proposal.

### **8.3.3 Proposal to Correct Annex1, Appendix 2, Paragraph 8.3.2, 8.3.3 and 8.3.4**

Present text, entered into force on the 23<sup>rd</sup> of September 2013, gives formulas to calculate both the required nominal capacity of the refrigerating unit and the required capacities of each evaporator.

However the text is not in line with the principle which has been used for years when cooling capacity for single compartment body is calculated.

It was suggested by CERTE that there would be a small conference call between Finland, France, Germany, Portugal, Denmark and TI to discuss this issue.

## **9.0 Discussions about ATP Implementation in Field of Retesting and the Renewal of In-Service Vehicles**

### **9.1 Methodologies for Renewal of Certificates of Compliance**

#### **9.1.1 6 and 9-Year ATP Retesting Method for Non-Independent Mechanically Refrigerated Equipment**

France gave a paper and presentation concerning the above. They have tried to integrate all the feedback into the proposal regarding the retesting of 6 and 9-year old small vans, in particular their ability to maintain correct internal temperatures at idle speed.

There were comments submitted by Mr Andreas Klotz (Germany) regarding this matter, but they appeared to be the comments of TUV and not the rest of the German test stations, it was suggested that perhaps all the test stations could provide feedback so that France may submit this proposal again to WP11.

The following comments were made:

Mr Devin (France): everyone agreed except Germany at the last WP11 session. Perhaps they could comment on this topic and respond to France.

Miss Kreb (Germany): it should not say idle speed during the pull down.

Mr Devin (France): France would amend the proposal with the comments taken on board about idle speed.

The CERTE committee proposed that Germany and France work together and submit a new proposal for the next WP11 meeting.

#### **9.1.2 6 and 9-year ATP Retesting Method for Multi-Compartments**

The German delegation decided not to discuss this issue if the markings and certificates were not agreed.

#### **9.1.3 Retesting of Cryogenic In-Service Equipment**

The proposal was not completed; it was proposed that a conference call was the best way forward in discussing this issue. KISC (Germany) didn't have enough time to work on this topic and so opted out of the discussions.

It was agreed that a starting document would be CE/TRANS/WP.11/2013/19.

The following were available for a conference call: Cemafroid, CRT, Mr Mr Raschle and possibly Thermo King.

#### **9.1.4 Small Containers**

No other matters were raised for discussion

#### **9.1.5 K-Coefficient for equipment in service**

TI presented a paper concerning the k values; In annex 1, paragraph 2 (and similar wording in paragraphs 3 and 4) of ATP can be found the phrase “The K coefficient of refrigerated equipment of classes B and C shall in every case be equal to or less than  $0.40\text{W}/\text{m}^2\cdot\text{K}$ ”.

Some contracting parties to ATP have implemented K-value testing for the renewal of ATP certificates after 6 years.

When ATP was written, the cooling capacity was a lot less than it is today, the capacity figures more than compensate for the k-value test after 6 and 9 years. TI want to prevent the early removal of equipment that is still fit for purpose.

The following comments were made:

Mr Devin (France): this is a fundamental change to ATP which must be discussed at WP11. We also need confirm the ageing with a study.

Mr Grealy (TI): TI accept the fundamentals of ATP, what they don't accept is premature removal of equipment because of a k-value test.

Mr Nobre (Portugal): this has been discussed many times, in Portugal the bigger transport companies sell their trailers after 5-6 years as it's not profitable.

Mr Dahl (Denmark): we have the same average figures from Portugal.

Mr Stumpf (TI): collect data from the test stations as to whether they do a k-value test at 6 or 9 years. If you do a study on the k-value what would you do once this has been completed?

Mr Rossi (Italy): if we were to look at reviewing the k-value test, we would need another k-value figure at 6 and 9 years.

Mr Kreitmayer (Austria): we need to define a maximum k-value.

Mr Lawton (UK): perhaps France, Italy, Spain and Portugal should discuss this issue.

It was agreed that there would be a discussion amongst France, Italy, Spain and Portugal in relation to the k-value testing and a whether there was a need for change.

### **9.1.6 Safety Factors and Ageing of Bodies : Evolution of k-Values over the Life of a Vehicle and Compliance with ATP**

Already discussed above

### **9.2 Other Matters**

No other matters were raised for discussion

### **10.0 Temperature Recorders Annex 2 Appendix 1**

#### **10.1 Consideration about Practices**

No other matters were raised for discussion

#### **10.2 Application of 12830, 13485 and 13486 Standards, Initial Verification and Periodic Re-Verifications**

Temperature recorders (12830) currently under review, it was suggested by Russian at last year's WP11 meeting that you should be able to move the sensor easily out of position in order to re-calibrate.

#### **10.3 Other Matters**

No other matters were raised for discussion

### **11.0 Impact of Environmental Regulations and Considerations about Energy Efficiency**

There are some new regulations released (517) which look at the phase-down of HFC's. The regulation was in French and a few points were translated for the CERTE group.

- Fridge unit Is included in F-Gas for trailers above 3.5 tonnes
- Periodic control of leakage is based on the equipment's CO<sub>2</sub>
- Engineers need to be certified when conducting maintenance
- Ban of refrigerant that is above a GWP of 2500
- Phase-down is based on the global market (18% in 2030)

The following comments were made:

Mr Grealy (TI): It's inevitable that there will be an increase in taxes. FIMA have announced that there will be a handbook with guidelines on F-Gas early next year.

Mr Stumpf (TI): you can't force an end user to use an alternative refrigerant if it's not a viable solution.

### **11.1 Evolution of Refrigerants (Regulation and Technical Developments)**

### **11.2 Energy Efficiency (Energy Labels, Minimum Energy Performance Standards (MEPS))**

There were no papers regarding this issue, but it was pointed out by Mr Lawton (United Kingdom) that when testing CO<sub>2</sub> systems you can get different efficiency figures and that you need to test at part load conditions.

### **11.3 Evolution of Foams (Legislative and Technical Developments)**

No other matters were raised for discussion

## **12.0 Recommendations from the IIR "Test Stations" to UN WP11 Meeting in October 2014**

The following points were proposed for recommendation to WP11 later this year:

- Reference to test standards
- Dimensions of panel vans and test report
- Airflow
- Proposal to correct annex1, appendix 2, paragraph 8.3.1
- 6 and 9-Year ATP Retesting Method for Non-independent Mechanically Refrigerated Equipment

## **13.0 Sub-Commission Work Plans**

The chairman discussed the sub-commission work plans.

- "Round Robin" thermal tests
- Proposal to correct annex 1, appendix 2, paragraph 8.3.2, 8.3.3 and 8.3.4
- K-coefficient for equipment in service

It was also suggested that in a future meeting we should look at the progress made between CERTE and WP11.

The minutes shall be approved by email and submitted as an informal document at WP11.



CERTE 2013 Recommendations	WP11 2013 proposal		Adopted to ATP		CERTE 2014 proposal	
	Yes	No	Yes	No	Yes	No
Dimensions of panel vans	X	-	-	X	X	-
"Round Robin" thermal test	-	-	-	-	X	-
Multi-compartment decals	X	-	-	X	X	-
Calculation tool	-	-	-	-	X	-
Dividing walls (add fixed) add measurements to options	X	-	-	X	X	-
Refrigeration unit to collect data for acceptable changes	-	-	-	-	-	-
Pull-down test of vehicles	X	-	-	X	X	-
Multi-compartment in-service inspections procedure	X	-	-	X	X	-
Issue of tanks as proposed by Finland	-	X	-	-	-	-

#### 14.0 Future Meetings

- Portugal was proposed as a venue for the May 2015 meeting

#### 15.0 Any Other Business

Mr. Raschle (Germany) informed the group about a new DIN specification that is under development which will cover function and performance qualification requirements for refrigerated equipment intended to be used for transport of pharmaceutical products. This should be accepted within 3-4 months and would include a door opening period and engine stop.

Mr Grealy (TI): this was on the agenda at the next AGM meeting in Brussels.

### Attendance: List of Participants

<b>Name</b>	<b>Surname</b>	<b>Country</b>	<b>Organization</b>	<b>Email Address</b>
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## Supplementary comments from Greece.

“We would like also to apologize for not attending the **CERTE** meeting in **Padua, Italy**. It is obvious it was a most successful meeting. Also very useful to receive so early the minutes from Mr. Mynott.

Regarding the **round robin comparison test** it is a very good idea to perform this inter-laboratory test for k-measurement. As an **ISO 17025** certified ATP Test Station we would also like to participate in this. We will wait for Mr. Raschle to prepare the corresponding test protocol.

Regarding the **panel van** it might be of some value to take into consideration the following. It is true that finding the exact outer dimensions of the panel van is sometimes a hard procedure and not always is followed the same procedure by all ATP Test Stations.

The following is a first thought on how to improve k-value tests for vans.

Two questions are of importance.

What if outer dimensions are not measured?

And why reduce iconically the k-value while the inner dimensions are the same?

Let me clear this by using an example:

Assume two manufacturers “A” and “B”

Both “A” and “B” build orthoparallel (for simplicity) panel vans with same inner dimensions:  $L_{in} \times W_{in} \times H_{in}$  ---  $2 \times 1.5 \times 1.5$  (meters) Mean Inner Surface:  $S_{in} = 16.5 \text{ m}^2$

Manufacturer “A” applies a 5 cm Polyurethane insulation and the outer dimensions are  $2.05 \times 1.55 \times 1.55$  Mean outer Surface:  $S_{Aout} = 17.515 \text{ m}^2$

Manufacturer “B” applies a 15 cm Non-Polyurethane insulation and the outer dimensions are  $2.15 \times 1.65 \times 1.65$  Mean outer Surface:  $S_{Bout} = 19.635 \text{ m}^2$

Mean Surface for “A” is  $S_{meanA} = \sqrt{S_{in} \times S_{Aout}} = 17.000 \text{ m}^2$

Mean Surface for “B” is  $S_{meanB} = \sqrt{S_{in} \times S_{Bout}} = 17.999 \text{ m}^2$

Assume both manufacturers perform a k-value test and the energy dissipated through the heaters and fans is same  $Q = 180 \text{ watt}$ .

Manufacturer “A” will receive a k-value  $k_A = Q / (S_{meanA} \times DT) = 0.4235 \text{ W/m}^2\text{K}$

Manufacturer “B” will receive a k-value  $k_B = Q / (S_{meanB} \times DT) = 0.4000 \text{ W/m}^2\text{K}$

DT is the Temperature Difference at 25 K during the k-value test.

Manufacturer “B” receives IR classification while Manufacturer “A” receives IN classification.

Both vans have exactly the same heat losses and transport the same volume of perishable foodstuffs.

Why should manufacturer "B" be rewarded by receiving a better k – value just because he made a worse construction but "smart enough" to have larger outer dimensions?

A suggestion strictly for vans could be to assume 10 cm insulation in any case. And receive k-value results based on the inner dimensions (outer dimensions would result by adding 10 cm insulation).

This way it would be impossible to make mistakes on panel vans, everyone would avoid delays, drilling of holes etc and it would make the k-value tests for vans less expensive definitely more reliable and exact. Also a positive side effect would be manufacturers would not try to enlarge outer dimensions in order to receive better k-value results"