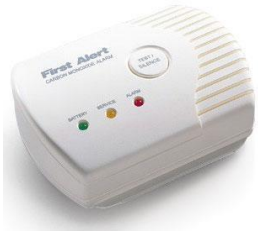
Joint Action 2012 GPSD

Joint Market Surveillance Action co-funded by the European Union
Agreement No: 2012 82 01

Final Technical Report, CO and Smoke Detectors

Covering the period 1 January 2013 – 30 April 2015



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PROSAFE
Joint Actions
Best Practice

March 2015

Disclaimer

This report arises from the Joint Market Surveillance Action on GPSD Products 2012 – JA2012, which received funding from the European Union in the framework of the 'Programme of Community Action in the field of Consumer Policy (2007-2013).

The report reflects only the views of the author. *The Consumers, Health and Food Executive Agency (Chafea)* cannot be held responsible for any use, which may be made of the information contained therein.

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Executive Summary

This report presents the activities undertaken and the results achieved in the Joint Action CO Detectors of "Joint Market Surveillance Action on GPSD Products – JA2012", supported financially by the European Union under Grant Agreement No. 2012 82 01.

The Activity was carried out by PROSAFE and 8 market surveillance authorities from 7 Member States (Austria, Germany, Ireland, Lithuania, the Netherlands, Portugal and Slovenia). Furthermore, Turkey participated in the Joint Action as collaborating partner outside the financial scheme.

The primary focus of the Activity was to ensure that CO Detectors on the EU market were safe and carried the appropriate warnings and instructions.

The total budget for this Activity has been € 261.323 of which the Commission funded 69,03% equivalent to € 180.391 EUR. The seven participating Member States supplied 53 days each, amounting to 371 days. With a similar contribution from Turkey, participating outside of the financial scheme, this will amount to 424 days in total. CO detectors, either battery or network supplied, for domestic and similar use were covered by the Joint Action.

The inspection visits were performed from October 2013 to January 2014, the tests were carried out from March to July 2014, follow-up and enforcement actions started in January 2015. In the course of the Activity, 81 models of CO detectors have been inspected, from which 25 were tested in a laboratory.

The tests were carried out by selecting some specific clauses of the relevant standard EN 50291-1:2010/A1:2012 *"Electrical apparatus for the detection of carbon monoxide in domestic premises"*.

After the overall tests, 3 models were OK, 4 models were alarming early than required, 18 models were noncompliant with the relevant requirements.

The Risk Assessment of CO detectors has proven to be a challenging exercise; in fact this was the first case experienced in PROSAFE Joint Actions since 2007 where the main risk was not arising from the product itself, but from its incorrect performance. In all other Joint Actions performed before, the risks posed by the product itself were considered and not the risk originated by an incorrect performance of the product, as it is the case of CO detectors. Thus, a new approach needed to be developed with the support of experts in Risk Assessment.

The result of the Risk Assessment that was carried out by the members of the JA on the models tested and on those inspected on spot, was as follows: 9 detectors were found to give Serious risk, 15 models High risk, 2 models Medium risk and 12 models Low risk. For 7 models no risks were detected and for 36 the Risk Assessment was not made available by members as they considered the model compliant.

At the time of writing of this report, several Follow-up actions have been put in place by the members in the Joint Action:

- 20 samples of one model were recalled
- 4 models were subject to a withdrawal action
- For 16 detectors the Authority contacted the economic operators asking them to take appropriate measures to solve the problems found
- For 23 other models, investigation and discussion with economic operators is still ongoing.

As a consequence of the long testing time and of the need to deeply discuss the appropriate approach to risk assessment, the follow-up and enforcement actions could not be finalised in the frame of the duration of the Joint Action.

The liaison between Customs and the Activity was limited to sharing checklists, as the Activity group agreed, at an early stage, that the sampling of products would take place at the importers/distributors and not at the border, moreover discussions on a deeper involvement of Customs in PROSAFE Joint Actions were still running with DG TAXUD. Relevant liaison was also established with Consumers and manufacturers organisations and the Standardisation Organisation.

The CO Detectors Activity maintained close links with the Consumer Safety Network throughout the Joint Action. The Commission representatives from the Units interested in the Activity (DG SANCO and DG ENTR) participated in almost all of the meetings within the Activity and shared very useful and valuable inputs.

A presentation concerning the JA2012 on CO detectors has been provided to Parliament and Commission in the frame of the 5th Carbon Monoxide Round Table held in Brussels on 3rd February 2015.
During the discussion held in the frame of the Joint Action, the allocation of the CO detectors, covered by the Joint Action, under GPSD (or LVD for those supplied by the network) or CPR was taken into consideration. The opinion of the members of the Joint Action is that CO detectors should not fall under CPR.

Caution!

The results stated in this report are based on products that were sampled from the markets in the participating countries by experienced market surveillance inspectors that were looking for noncompliant and potentially unsafe products. As in any routine market surveillance activity, the results represent the targeted efforts that authorities undertake to identify unsafe products. They do not give a statistically valid picture of the market situation.

The samples were tested at accredited laboratories. The test focused on those safety requirements that have the largest impact on consumer safety.

Introduction

This is the final technical report prepared for the CO and smoke detectors of the Joint Market Surveillance Action on GPSD Products – JA2012. The Joint Action received funding from the European Union in the framework of the 'Programme of Community action in the field of Consumer policy (2007-2013)'.

Market Surveillance Authorities of participating Member States cooperated in drawing up and executing the Activity and provided an Activity Leader. The Activity Coordinator was a PROSAFE consultant.

In Chapter 1, the report deals with background information like objectives, budget matters, the phases and timeline throughout the Activity.

Chapter 2 deals with setting up the Market Surveillance Activity and preparing the supporting documents such as checklist and instructions for inspection. It also includes details on the execution of the inspection visits.

Chapter 3 covers the Testing Activity and gives details on the process for the selection of the testing laboratory, on the tests carried out and an overview of the relevant results.

In Chapter 4 details on the approach to Risk Assessment, on the relevant results and information on the follow-up and enforcement actions are given.

Chapter 5 covers liaisons and involvement of Customs, Consumers, Economic Operators and Other Parties.

Chapter 6 is dedicated to the evaluation and lessons learned in carrying out the Activity, while chapter 7 gives info on the bibliography of reference documents cited in this report.

The Annexes show the most significant deliverables mentioned throughout the report.

1 Background Information

This chapter presents a short extract of the project description. The full description can be found in the Grant Agreement[1].

1.1 Title of the Activity

CO and smoke detectors

The Activity was part of Joint Market Surveillance Action on GPSD Products – JA2012

The European Commission supported the Joint Action financially under Grant Agreement No. 2012 82 01.

1.2 Participating Member States

The Activity was undertaken by PROSAFE and 7 Market Surveillance Authorities from 7 Member States (Austria, Germany, Ireland, Lithuania, the Netherlands, Portugal, and Slovenia). Furthermore, Turkey participated in the Joint Action as collaborating partner outside the financial scheme.

The applicant body that also took overall responsibility for the Joint Action was PROSAFE.

1.3 Overview of key staff in the Activity

The Activity Leader was Helmuth Perz, Austrian Federal Ministry of Labour, Social Affairs and Consumer Protection (BMASK).

The Activity Leader was supported by the PROSAFE consultant Fabio Gargantini who acted as Task Coordinator.

1.4 Main objectives

The general objectives of the Joint Action were to continue to create conditions whereby Member States could cooperate successfully on market surveillance operations and to co-ordinate a number of product activities exposing the results of the action to the largest number of Member States national authorities possible.

[1] *See Chapter 7 - Bibliography*

The primary focus of the Activity was to ensure that CO detectors on the EU market were safe and carried the appropriate warnings and instructions.

The following specific objectives were identified:

- To develop best practices and exchanging experience with carrying out market surveillance activities on CO detectors;
- To draft recommendations for later development for policy makers, legislation, standards, consumers.
- To gain experience with following up the market surveillance activities which will be particularly important in light of the movement towards establishing a multi-annual European level market surveillance programme.
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1.5 The volume of the Activity

The total budget for this Activity has been €261.323 of which the Commission funded 69,03% equivalent to €180.391 The seven participating Member States supplied 53 days each, which made 371 days. With a similar contribution of Turkey, participating outside of the financial scheme, this will count on to 424 days in total.
In the course of the activity 81 models of CO detectors have been inspected, 25 of them have been tested in a laboratory.

1.6 The phases of the Activity

The Activity has gone through the phases in Table 1

First phase: 2013 March (month 3) – August (month 8)	Start-up activities: • Kick-off meeting, establishing the project plan and detailed objectives and activities. • Sampling plan, checklists and guidelines for market surveillance • Two project meetings
Second phase: 2013-2014 September (month 9) – December (month 24)	Market surveillance activities: • Member States sample, test products and action is taken against dangerous products • Information for newsletter is collected • Two project meetings
Third phase: 2015 January (month 25) – March (month 27)	Dissemination of results, finalisation of the best practices. • One project meeting • The final report (this report) has been written; deliverables have been finalised and made available. • Presentation of the results at the final conference of JA2012 in February 2015.

Table 1: phases of the CO Detectors Activity within the frame of JA2012

The Activity was a market surveillance action that followed these phases:

- Deciding on sampling criteria
  The Activity decided on how the Member States should carry out sampling, i.e. how many samples would be taken by each Authority, when would the sampling take place, should sampling take place in one or more rounds, what criteria would be applied when selecting the specific samples, and how many items should be taken of each product.
- Sample products
  The Member States would acquire products according to the sampling criteria. This implied that the market surveillance authorities would visit manufacturers, importers, wholesalers and retailers to collect products. This was coordinated and reported back to the Activity.
- Test products at a laboratory
  The Activity would issue a call for tender and select an appropriate laboratory and the Member States were instructed how to send their products for testing. The products were shipped and the laboratory submitted test reports after the actual testing took place. The Joint Action shared all test reports with all the participants.

- Risk assessment
  The participants developed a common approach to the application of the RAPEX risk assessment guideline for the particular product to assure that the resulting assessments were harmonised to the extent possible. The Member States then assessed the risk for the products applying the agreed approach and any relevant national conditions.
- Follow-up on non-compliant products and exchange information on follow-up activities.
  The Member State authorities followed up towards the economic operators in their countries, i.e. consulted the economic operators on the results from the risk assessment, agreeing on appropriate measures and followed-up to insure these were properly implemented. The resulting measures were reported to the Joint Action and shared with all participants.

1.7 Timeline for the Activity

The timeline for the Activity with the sequence of the main activities is given in Table 2:

• 20 February 2013	Launch of Joint Action 2012, CO and smoke detectors were covered. Start of reporting period for the interim technical implementation report
• 15-16 April 2013	Kick-off and planning meeting (first project meeting)
• 6 September 2013	Launch of the call for tenders
• 23 September 2013	Closing of call for tenders
• 1 October 2013	Starting of Market Surveillance activities
• 15 October 2013	Selection of the laboratory
• 31 January 2015	Closing of Market Surveillance activities
• 4 February 2014	Signature of the contract with the selected laboratory
• 10 March 2014	Starting of tests
• 31 march 2014	Interim implementation report covering the period until 31 January 2014
• 9 July 2014	Second project meeting
• 31 July 2014	Ending of tests
• 20 August 2014	Two experts from the JA visited the testing laboratory
• 26 September 2014	Third project meeting
• 15 October 2014	Fourth project meeting
• 31 October 2014	Second progress report covering the period from 1 February 2014 to 31 Augu 2014.
• 20 January 2015	Fifth project meeting
• 11 February 2015	Final conference Joint Action 2012
• 31 March 2015	End of reporting period, final technical report.

Table 2: meeting data and/or reporting deadlines

The main items discussed in the different meeting held in the frame of the JA are in Annex 1 to this report.

1.8 Other background information

The Grant Agreement foresaw a cost for testing a €800/detector, whilst the best offer received and relevant to the selected laboratory was more than 4 times higher, approaching €3.300, meaning that only 12 models instead of 30, as initially planned and stated in the Grant Agreement, could be tested.

In order to have a more significant number of samples (at least 18-20) to be covered by tests and considering that CO detectors deserve actually the highest attention, the standards for CO detectors and for smoke detectors are different and that laboratories involved in testing of CO detectors and of Smoke detectors are different: it was agreed that the Activity within the framework of the 2012 Joint Action will concentrate on CO detectors.

This proposal was discussed at PROSAFE Board and CEO level and was confirmed. PROSAFE Board also decided to introduce an Activity on smoke detectors in the proposal for JA2013.

Note: the proposal was accepted by Chafea and the smoke detectors will be covered within JA2013, Agreement No: 2013.82.01

2 Market Surveillance Activities

2.1 Set-up checklist and guideline development activities

The market surveillance phase (second phase) started with the development of appropriate tools to assist inspectors in their inspection task.

Two checklists have been set up, one concerning CO detectors and the other concerning smoke detectors, based on the checklists that were developed by Slovenian Authorities for the market surveillance action they performed in their Country in the period 2010-2012.

Inspectors had to fill in the checklist for each model verified during the inspection visit.

The checklist items for CO Detectors have been derived from the applicable clauses in standard EN 50291-1:2010/A1:2012 *"Electrical apparatus for the detection of carbon monoxide in domestic premises"*[2], those for smoke detectors have been derived from the applicable clauses in standard EN 14604:2005 *"Smoke alarm devices"*.

In order to assist the inspectors in their tasks and to guide them in the correct approach on the selection of products, specific guidelines were developed within the frame of the Joint Action.

Checklists and guidelines are the main parts of deliverable D8.2DE. Checklists are in Annex 2 and guidelines are in Annex 3 to this report.

> *Note: as mentioned under item 1.8, the checklists and the guidelines on smoke detectors will be used in the frame of the specific Joint Action under Agreement No: 2013.82.01*

2.2 Execution of inspection visits

The inspections visits were carried out from October 2013 to January 2014. The following types of CO detectors had to be covered by the inspections:

- Models which are battery supplied;
- Models which are network supplied;
- Models which are of type A, designed to provide audible and visible alarm and an executive action in the form of an output signal that can be used to activate directly or indirectly a ventilation or another similar device;
- Models which are of type B, designed to provide audible and visible alarm only.

It was agreed that members should inspect and try to make available checklists for minimum 10 - maximum 15 models of CO detectors for domestic and similar use per participating Country. Each member was also required to select for testing at least 3 models of CO detectors amongst those covered by the checklists.

As a result of the inspection visits, 81 models of CO detectors were covered by checklists.

Figure 1 gives the detail of inspections carried out by each Member in the Joint Action:

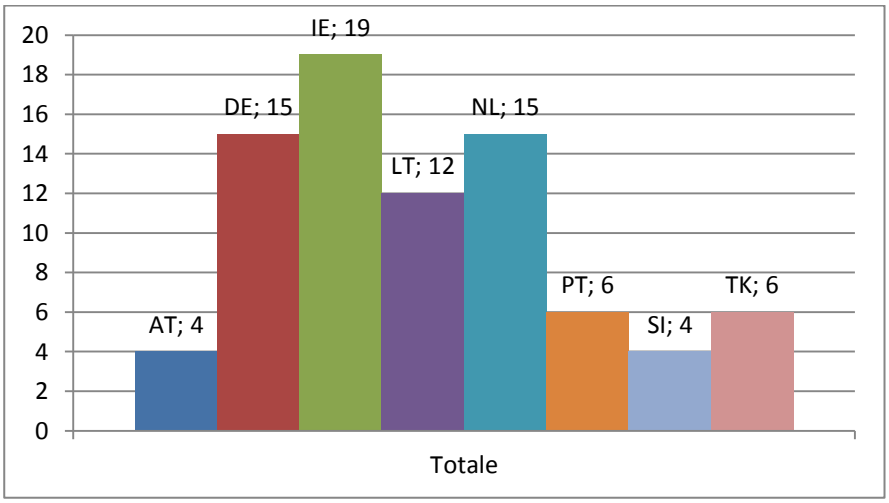


Figure 1: Number of Detectors inspected by each Member

[2] *See Chapter 7 - Bibliography*

2.3 Results from inspections visits

During the visits, inspectors were performing visual inspections on all products, checking in particular the correctness of marking, the type of supply, the presence and suitability of instructions.

Figure 2 shows a summary of such activity:

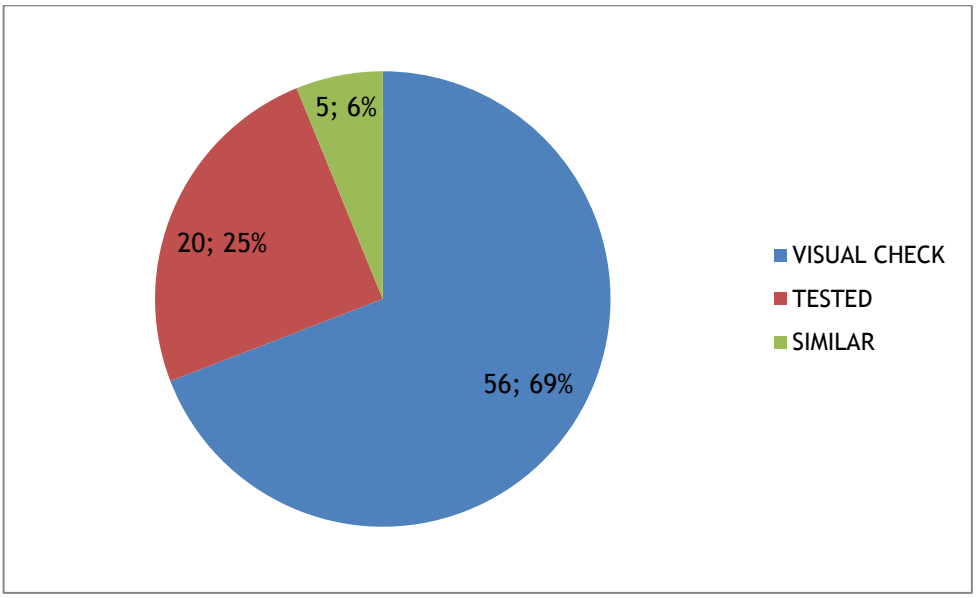


Figure 2: Verifications made

Products indicated as similar were, in fact, products that have the same characteristics and constructional layout (enclosure, printed circuit board) of one of the other 20 models that were tested.

The following main outcome can be derived from the data collected by inspectors during the inspection visits and reported in the checklists:

- 58 models are battery supplied, 22 are supplied by the network and 1 model is supplied by both: batteries and network;
- The price was ranging from €8.42 to €160, 65% of the products were in the range €20 to €50;
- The CE marking was on all products, in one case the dimensions of the CE marking were not correct;
- Nine models missed the reference of the manufacturer or the brand name;
- Instructions were missing for two products;
- In 16 cases the instructions were in a language that could not be easily understood by the consumers in the given Country

3 Product Testing Activity

3.1 Tendering process for test laboratories

The test requirements were agreed within the group of experts. A list of potential laboratories was populated by referring to the data available in NANDO - New Approach Notified and Designated Organisations – website and by information delivered by the participants.

A call for tender was issued to 36 laboratories using PROSAFE's standard procedure. Three laboratories replied. They were evaluated by the group of experts that analysed a dedicated spreadsheet prepared by the Task Coordinator. The result of this process was that the laboratory of BSI Group, in Milton Keynes UK, was selected to perform the tests.

The following tests were selected to be carried out, as they were considered to be the most significant:

Test carried out according to EN 50291-1:2010/A1:2012							
Clause 5.3.1	Clause 5.3.14	Clause 5.3.14	Clause 5.3.14	Clause 5.3.6	Clause 5.3.8	Clause 5.3.16	Clause 6.1
Performance Testing (All test Gas A, B, C, D Tested)	Long Term Stability 30 Day (Only Test Gas D)	Long Term Stability 60 Day (Only Test Gas D)	Long Term Stability 90 Day (Test Gas A, B, D Tested)	Response and Recovery	Humidity Effects	Alarm Sound Level	Battery Fault Warning

The tests had to focus on the requirements that were considered to be the most important for the verification of the CO detectors. For sake of efficiency and cost limitation it was agreed with the laboratory that as soon as a significant noncompliance was found, the tests on the given product had to be stopped. In practice there was no such case.

In the event that, during the tests, the laboratory would have found supplementary potential noncompliance, in addition to those arising from the tests required in the contract, they had to inform the Task Coordinator in order to evaluate the way to progress with the tests.

The total cost for testing the 20 (+5) models has been of € 44.270, including VAT.

3.2 Selecting products, sampling

For each model to be tested 3 samples had to be picked up.

The working group took care, as much as possible, to sample models that were different from the participating countries. Where similar models were selected and sent to the laboratory, it was agreed that only one of the two models had to be tested. For the similar one it was agreed that the laboratory will deliver to Countries concerned a test report with a cover sheet relevant to the non-tested samples delivered and having as annex the full test report for the similar sample that was tested and was delivered by the other member in the JA. It is important to underline that, considering the number of the Member Countries in the Joint Action and the market structure, the sampled products do not give a representative picture of the EU market and that was not the intention of the Joint Action.

3.3 The test program

The tests covered detectors delivered by 6 Countries: Austria, Germany, Ireland, Lithuania, the Netherlands and Slovenia. Detectors from Portugal could not be tested due to late delivery.

In total 26 models were delivered to the laboratory, 5 models were excluded from the test programme as they had the same characteristics and constructional layout (enclosure, printed circuit board) of some of the models that were tested and one model was excluded from programme due to incompatibility (it was only a detector in order to operate needed to be connected to a control unit and as such not considered to be for domestic use and not covered by the EN 50291-1).

In total 20 models of detectors were tested, 60 samples (units) were subjected to the tests; two of these samples were faulty from start.

Concerning the 5 models not tested and how to act when the similar tested model was failing, it was agreed that the laboratory had to prepare, and deliver to the corresponding Countries, a test report with a cover sheet relevant to the untested samples delivered and including, as an annex, the full test report for the similar sample delivered by the other member in the JA.

The cover sheet had to indicate that the laboratory performed an analysis on the untested sample and took in account, by means of visual inspection and also relevant pictures, annexed to the Test Report, that it was similar or identical to the tested one. The results of these tests were used in the reporting on the JA and by the relevant Member State for an information action versus the economic operator concerned.

It was noted that, as already agreed with the laboratory and due to their last delivery to the laboratory, the samples selected from Portugal could not be tested.

The tests were conducted on the detectors installed as required by the standard and following the instructions for use.

If a failure occurred on a detector during testing, tests continued unless the failure rendered the detector unusable.

The testing started in March and finished by the end of July 2014. The long testing time was due to the performance of the tests of Clause 5.3.14 Long Term Stability that required to verify the correct operation of the detector after 30, 60 and 90 days of operation in an ambient with a given mixture of air and gas.

Details of the tests carried out are presented below:

- Clause 5.3.4 - Alarm conditions

  Three samples were exposed to CO - air mixtures as detailed in the following table.

  The alarms were required to operate according to the conditions in the table and recover from the alarm state within 6 min when exposed to clean air.

Test gas reference	CO volume ratio	Test gas volume ratio	Without alarm before	With alarm before
A	30PPM	33 ppm ± 3 ppm	120 min	-
B	50PPM	55 ppm ± 5 ppm	60 min	90 min
C	100PPM	110 ppm ± 10 ppm	10 min	40 min
D	300PPM	330 ppm ± 30 ppm	-	3 min

- Clause 5.3.6 Response and recovery to a high CO volume ratio

  Three samples were exposed to high CO volume ratio (5000PPM)

  The alarms were required to operate within 3 min and recover from the alarm state within 15 min when exposed to clean air.

  The samples were furthermore exposed to 'Test Gas B' and were required to operate according to the conditions in following table and recover from the alarm state within 6 min when exposed to clean air.

Test gas reference	CO volume ratio	Test gas volume ratio	Without alarm before	With alarm before
B	50PPM	55 ppm ± 5 ppm	60 min	90 min

- Clause 5.3.8 - Effects of Humidity

  Three samples were maintained at a humidity of 90 ± 5% r.h. at 40 ± 2°C for 6 h followed by exposure to 'Test Gases A, B & D'

  The alarms were required to operate according to the conditions in the following table and to recover from the alarm state within 6 min, when exposed to clean air.

Test gas reference	CO volume ratio	Test gas volume ratio	Without alarm before	With alarm before
A	30PPM	33 ppm ± 3 ppm	120 min	-
B	50PPM	55 ppm ± 5 ppm	60 min	90 min
D	300PPM	330 ppm ± 30 ppm	-	3 min

- Clause 5.3.14 - Long term stability

  Three samples were exposed to CO – air mixture of 10PPM ± 5 ppm for 90 days.

  At 30 & 60 day interval the samples were exposed to 'Test Gas D' only.

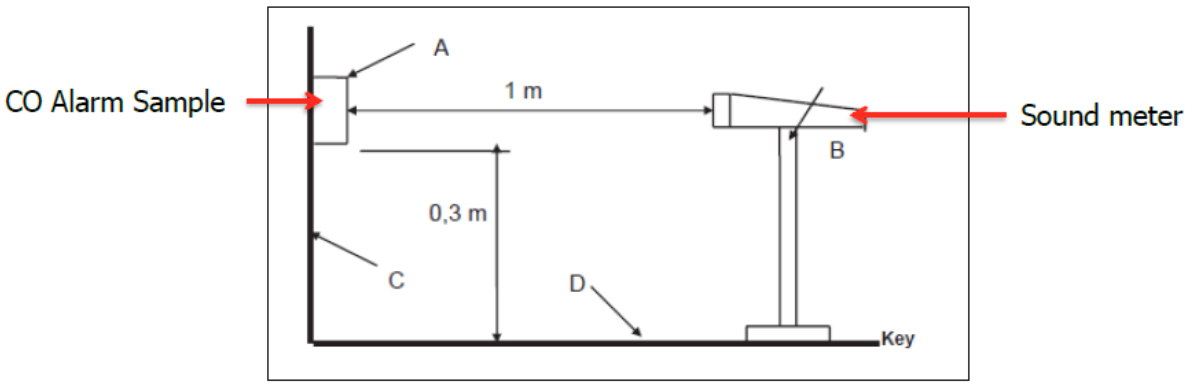
  At 90 day interval samples were exposed to 'Test Gases A, B & D'.

  The samples were required to operate according to the conditions in the following table and recover from the alarm state within 6 min when exposed to clean air.

Test gas reference	CO volume ratio	Test gas volume ratio	Without alarm before	With alarm before
A	30PPM	33 ppm ± 3 ppm	120 min	-
B	50PPM	55 ppm ± 5 ppm	60 min	90 min
D	300PPM	330 ppm ± 30 ppm	-	3 min

- Clause 5.3.16 - Sound Level

  One sample was measured for sound level output from a distance of 1m, the sound level is required be at least 85 dB (A) at 1 m



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- Clause 6.1 - Battery Fault

  Three samples were reduced to a voltage that indicated a fault warning (UE),

  The samples were then operated at UE + 0.1V and exposed to 'Test Gases A, B & C'.

  Samples were required to operate according to the conditions in the following table and recover from the alarm state within 6 min, when exposed to clean air.

Test gas reference	CO volume ratio	Test gas volume ratio	Without alarm before	With alarm before
A	30PPM	33 ppm ± 3 ppm	120 min	-
B	50PPM	55 ppm ± 5 ppm	60 min	90 min
D	300PPM	330 ppm ± 30 ppm	-	

3.4 Results

When the tests had finished, BSI prepared a test report for each tested model. It included the test results obtained and indicated the noncompliance to the particular clauses of the standard. Also included were pictures of the tested product as well as comments or other relevant clarifications.

After the overall tests 3 models were OK, 4 models were alarming earlier than required), 18 models were noncompliant with the relevant requirements.

The summary of the results on each of the tests, considering all the three samples tested for each model,

is given in the following table. It has to be noted that, even if some samples pass a single given test, in another they were not complying; as consequence and as foreseen by the standard they were considered not compliant.

Type of test *(Clause of the Standard)*	PASS	FAIL	Alarming early than required
Alarm Sound Level *(Clause 5.3.16)*	25	0	0
Performance Testing (All test Gas A, B, C, D Tested) *(Clause 5.3.1)*	11	10	4
Long Term Stability 30 Day (Only Test Gas D) *(Clause 5.3.14)*	20	5	0
Long Term Stability 60 Day (Only Test Gas D) *(Clause 5.3.14)*	21	4	0
Long Term Stability 90 Day (Test Gas A, B, D Tested) *(Clause 5.3.14)*	14	9	2
Response and Recovery *(Clause 5.3.6)*	7	15	3
Humidity Effects *(Clause 5.3.8)*	7	11	7
Battery Fault Warning *(Clause 6.1)(*)*	17	5	0
Markings *(Clause 4.8)*	19	6	0

(*) Three models of detectors were not subjected to this test as they were not provided with a back-up battery

It shall be noted that EN 50291-1 is not harmonised under GPSD and as such it does not give by itself a presumption of conformity to GPSD.

3.5 Conclusions

The overall result of the test shows that, in spite of the limited options available for a targeted choice, the sampling process was very effective and the inspectors were able to identify potentially noncompliant products in their sampling, so only few resources were wasted testing safe and compliant products.

The number of noncompliant detectors seems to be very high. The reason for this is that the inspectors had been asked to identify potentially hazardous products when they sampled, hence it can be expected that the share of noncompliant products will be high.

It is underlined that considering the number of Member Countries in the Joint Action and the market structure, the sampled products do not give a representative picture of the EU market and therefore the results of the tests do not represent the actual safety level of the detectors on the European market.

4 Risk Assessment and Follow-up Activities

4.1 Set-up risk assessment

The Risk Assessment of CO detectors has proven to be a challenging exercise, in fact it was the first case experienced in PROSAFE Joint Actions since 2007, where the main risk was not arising from the product itself, but from its non-correct performance.

It was considered that this may be quite problematical as the Risk Assessment approach and the relevant informatics tool that was developed by the Commission under the frame of the so called "Risk Assessment Guidelines"[3], are relevant to the risks posed by the product itself and not as consequence of a incorrect performance of the product, as it is the case of CO detectors. Consequently, a new approach needed to be developed with the support of experts in Risk Assessment Group within PROSAFE.

The members discussed a practical approach for the definition of the risk associated with major noncompliance verified during the tests.

It was profoundly assessed if the occurrence of the hazardous situation (i.e. a CO contamination) shall be considered as the first step in the risk assessment and how to consider the influence of the installation of the CO detector. It was also agreed that any type of user can be subject to the problems caused by the non-correct operation of the CO detector.

With reference to the specific results of the tests it was agreed that the major risk may arise when the detectors fail to the following tests: Response and recovery to a high CO volume ratio, long term stability (variation on 30 & 60 days tests) and battery fault warning.

4.2 Risk assessment results

The resulting Risk Assessment is shown in Annex 4. It covers two basic scenarios.

Considering the variability in the results of the tests and checks during inspections, it was not possible to perform the risk assessment for all the possible scenarios/risks within the working group of experts in the Joint Action; it was agreed that the members will use the Risk Assessment examples in Annex 4 as basis for their further risk assessments.

The results of the overall Risk Assessments performed by members are shown in Figure 3.

Level of Risk	
Serious	9
High	15
Medium	2
Low	12
No Risk	7
Not available as samples were considered to be compliant	36

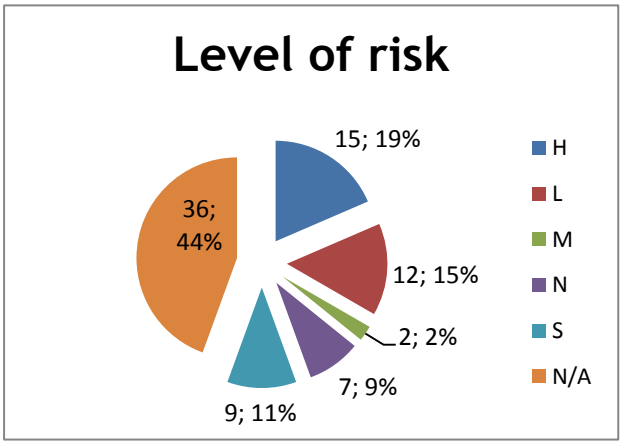


Figure 3: Results of Risk Assessments

[3] *See Chapter 7 - Bibliography*

4.3 Follow-up and enforcement activities

Before describing in detail the enforcement activities it is useful to summarise the kind of measures usually taken by market surveillance authorities:

- Recall: in line with the definition found in Directive 2001/95/EC, this shall mean any measure aimed at achieving the return of a product that has already been supplied or made available to consumers by the producer or distributor. In some cases this can raise up to the physical destruction of the unsafe products.
- Sales ban: product is prohibited from sale permanently or during a certain time-frame/period.
- Withdrawal: in line with the definition found in Directive 2001/95/EC, this means any measures aimed at preventing the distribution, display and offer of a product which is dangerous to consumers.
- Recommendations to economic operators: manufacturer or involved economic operator (e.g. the importer) takes measures to eliminate risks posed by products in line with directions provided by the respective market surveillance authority. There could be corrective or preventive type of actions, including some other type of minor actions which also fall under this category. For example minor design changes, minor changes in production or quality control, minor update of marking etc.
- Activity in progress: the market surveillance authority is still working on the type of action needed, possibly in coordination with the economic operator. It could be, for example, that the authority is waiting for further technical reports from the manufacturer before action is taken. This may take time, especially if one is dealing with information that needs to come from outside the EEA.

At the time when this Report is drafted, the following Follow-up actions have been put in place:

- 20 samples of one model were recalled
- 4 models were subject to a withdrawal action
- For 16 detectors the Authority contacted the economic operators asking them to take appropriate measures to solve the problems found
- For 23 other models investigation and discussion with economic operators is still running

It was very encouraging to see that the cooperation with some economic operators went smoothly and that some 70% of the measures were actually voluntarily taken by the economic operators.

It shall be underlined that, as consequence of the long testing time and of the need to deeply discuss the appropriate approach to risk assessment (see item 4.1 in this report), the follow-up and enforcement actions could not be finalised in the frame of the duration of the Joint Action.

5 Liaison

5.1 Involvement of Customs

The liaison between Customs and the Activity was limited to sharing of checklists, as the Activity group at an early stage agreed that the sampling of products would take place at the importers/distributors and not at the border and as the discussions on a deeper involvement of Customs in the PROSAFE Joint actions was still taking place with DG TAXUD.

The check lists used in the frame of the Joint Action were prepared considering that that they could be used as basis for similar simplified checklists to be developed by Customs. This was based on the experiences of the group that checklists should be easy to understand and simple to use to avoid misunderstandings and to rule out the possibility for misinterpretation to the extent possible. Such checklists should be based on clear and simple and indicators that would show when to “raise a flag” and inform the market surveillance authorities that further investigations are required on the product rather than making the customs officers experts on the products.

The group agreed it was useful to check the labelling and the instructions for use to use that as a first indicator in a preliminary investigation carried out by customs officers at the border or market surveillance officers doing inspections at economic operators. The group had found that products with no label whatsoever almost always showed technical noncompliance.

It was considered that is not possible to test CO-detectors on-spot, therefore such products might be not very appropriate for customs control.

5.2 Outreach to standards

In the frame of the Action a good liaison was established with CENELEC; representatives of the involved Technical Committee (TC 216 – Gas Detectors) participated to the kick-off and to the final meeting.

No particular problems were encountered with the application of EN 50291-1:2010+A1:2012. Nevertheless it should be mentioned that tests according to the standard are complex, thus time consuming and very expensive; the costs of a test exceed the price of the product up to 1000 times. In fact the standard and the relevant tests are designed for type testing to verify compliance of products before being put on the market and not for controls of the produced samples or for market surveillance.

For products supplied by the network, it was considered that a specific warning stating the meaning of: "*In case of breakdown of electricity supply please check if the device is still functioning correctly*" should be introduced in the instructions and this should be considered to be added as requirement in the a.m. standard.

5.3 Consumers

Similar to previous joint actions coordinated by PROSAFE, ANEC has been involved in this project from the start providing knowledge and a view from the consumer's perspective. Effective collaboration and cooperation existed throughout the project.

It will also be useful to ensure that consumers are aware, read, understand and follow warning labels and manuals in order to install and use their detectors in a safe and correct way. This is in important in case of gas detectors for which correct installation, due cleaning and maintenance (e.g. timely batteries replacement) are fundamental for a correct and safe operation of the device.

It is therefore suggested that market surveillance authorities work jointly with economic operators and consumer organisations at a national level in order to ensure that any particular risks or lack of knowledge on certain risks within detectors continue to be well explained to consumers.

5.4 Economic operators

With regards to economic operators, it is important that, firstly, they always try to cooperate with market surveillance authorities in order to reduce any risks present in the market. Consequently, it is strongly suggested that European organisations representing economic operators are encouraged to participate in joint market surveillance activities such as those coordinated by PROSAFE. Indeed, the level of voluntary action taken by economic operators implies that there is already a good working relationship.

It is recommended that more European organisations representing businesses, manufacturers, importers and traders in market surveillance projects take part in the Joint Actions.

Ultimately, continuous and open dialogue between all of the various stakeholders, in particular manufacturers and importers, could help to identify further possible safety issues in the area of CO detectors, taking advantage of their market intelligence and knowledge of the products. This in turn could lead to a safer European Single Market.

5.5 Other liaison

The CO Detectors Activity maintained close links with the Consumer Safety Network throughout the Joint Action. The Commission representatives from the Units interested in the Activity (DG SANCO and DG ENTR) participated in almost all of the meetings within the Activity and gave very useful and valuable inputs.

Presentation on the JA2012 on CO detectors has been provided to Parliament and Commission in the frame of the 5th Carbon Monoxide Round Table held in Brussels on 3rd February 2015.

6 Evaluation, Lessons Learned

6.1 CO detectors under GPSD[4] or under CPR[5]?

During the discussions held in the frame of the Joint Action, the allocation of the CO detectors covered by the JA under GPSD (or LVD[6] for those supplied by the network) or CPR was considered. In fact the common understanding is that smoke detectors fall under CPR, CO detectors not.

Members were informed that discussion is actually running on this matter at Commission level, as some Commission representatives and some Member Countries consider that also CO detectors should fall under CPR.

The opinion of the members of the Joint Action is that, for the following reasons:

a) CO detectors should fall under GPSD if supplied by batteries and under LVD if supplied by the network, and not under CPR as they do not cover any safety/performance aspect of the building, but they cover explicitly the safety of the users.

b) They are not covered by the CPR as they are not intended to be *"...produced and placed on the market for incorporation in a permanent manner in construction works....and… the performance of which has an effect on the performance of the construction works"* as indicated in CPR Art. 2.

CO detectors should not fall under CPR.

6.2 Lessons learned

There is a need to properly discuss the approach to Risk Assessment for products that may create risks due to their bad performance, not by inherent unsafe conditions as it was the case for CO detectors. Specific Risk Assessment examples should be drafted by the expert group on Risk Assessment for this type of products and due training to all the Member States shall be foreseen to harmonise the approach.

In addition the expert group on Risk Assessment has been asked to make a specific evaluation on the risk posed by detectors that alarm early than required and to evaluate if this shall be considered as serious or high risk, as in the opinion of some members of the Join Action this could reduce the reliability of the product in the view of the user. For JAs with long time testing, as it was the case for CO detectors, the overall duration of the JA may not be sufficient to duly finalise the Follow-up and enforcement actions.

[4] *See Chapter 7 - Bibliography*
[5] *See Chapter 7 - Bibliography*
[6] *See Chapter 7 - Bibliography*

7 Bibliography

1. Grant Agreement for an Action – Multiple Beneficiaries, Agreement Number 2012 82 01. Grant Agreement 2012 82 01 – GPSD JA.
2. EN 50291-1:2010/A1:2012 *"Electrical apparatus for the detection of carbon monoxide in domestic premises"*

   The standard can be obtained from the national standardisation bodies. An overview of these bodies can be found on the website of the European Committee for Standardisation, CEN-CENELEC at www.cenelec.eu.
3. Commission Decision 2010/15/EU of 16 December 2009 laying down guidelines for the management of the Community Rapid Information System 'RAPEX' established under Article 12 and of the notification procedure established under Article 11 of Directive 2001/95/EC (the General Product Safety Directive). Published in the Official Journal of the European Union L22/1.
   Web based "tool" for Risk Assessment: http://europa.eu/sanco/rag
4. Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety (L 11/4, Official Journal of the European Communities 15.1.2002).
5. Directive 89/106/EEC of the European Parliament and of the Council of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (L 40/12, Official Journal of the European Communities 11.2.89)
6. Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (L 374/10, Official Journal of the European Union 27.12.2006)

Annex 1: Main items discussed in the Meetings

Kick-off Meeting

The kick-off meeting was held in Brussels from 15th to 16th April 2013.

The meeting presented the scope of the CO and smoke detectors activity and provided an opportunity for input from the European Commission and from the participants. This allowed the Member States participating in the activity to identify a number of issues that should be taken into account in the planning and to share information on the administrative issues connected to the Joint Action.

Part of the kick-off meeting was open to stakeholders, which had the opportunity to give their views and their inputs on the main items to be considered for the activity. Representatives from Consumers, Standardisation Bodies and Federation of the European Union Fire Officer Associations attended the meeting and gave valuable inputs.

The discussion at the meeting focused on the following items:

- Project introduction & objectives
- Stakeholders' perspective, input and comments
- Types of products to be considered
- Standards to be used
- Main risks to be covered

It was also mentioned that, as it was already the case in previous Joint Actions, it may be possible to concentrate on a given type of product in the JA2012 (e.g. CO detectors) and eventually organise another activity in a future Joint Action for the type of product (e.g. smoke) that remains to be covered.

2nd Project Meeting

The second project meeting was held on 9th July 2013.

The main issues of the meeting were:

- The discussion with some of the members of their views on the JA and on experiences they had concerning CO and smoke detectors;
- The exchange of views with some technical experts coming from the standardisation committees ;
- The evaluation of the characteristics of some samples of CO detectors that will be taken from the market and brought to the meeting by the Task Leader;
- The discussion of the types of products that should be selected by members and on the standards to be applied for the verification;
- The discussion of the checklists that shall be used for the inspection and of the instructions for the inspection;
- The discussion of the contents of the call for tenders for the tests

Meeting in the laboratory

The meeting was held on 20th August 2014. The purpose of this meeting was to visit the laboratory, in order to verify their testing capabilities and to discuss with them the structure and contents of the information to be delivered at the end of the tests. The Task Coordinator and one member of the Joint Action were involved in this meeting.

3rd project meeting

The third project meeting was held on 26th September 2013.

The main issues of the meeting were:

- The analysis of the tenders received;
- The selection of testing laboratory that was made by making use of a specific matrix indicating the characteristics of the laboratories that answered and the contents of their tenders;
- Discussion of the number of samples to be selected for the tests and analysis of the relevant financial consequences arising from the overall number of tests to be carried out;
- Confirmation of key test requirements;

- Final analysis and approval of the Check Lists;
- Discussion on samples to be selected, criteria for selection and instructions for inspection;
- The discussion of members' questions;

4th Project Meeting

The fourth project meeting was held on 15th October 2014.

The main issues discussed at the meeting were:

- The updating on inspections carried out and eventual problems encountered;
- Analysis of the results of the tests, discussion on the main outcomes from the tests. The reports delivered by the laboratory were commented in their structure and main contents.
- Preparation for the risk assessment, risk profile and basics of risk assessment for non-compliant products. It was agreed that the major risk may arise when the detectors fails to the following tests:
    - 5.3.6 Response and recovery to a high CO volume ratio;
    - 5.3.14 Long term stability (variation on 30 & 60 days tests);
    - 6.1 Battery fault warning.
- Preparation of the follow-up actions;
- Cooperation with Customs.

5th Project meeting

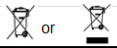
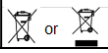
The fifth project meeting was held on 20th January 2015

The main issues of the meeting were:

- Analysis of the results of the risk assessment carried out by members on the products tested and on those inspected and for which there were problems on the documentation or on the characteristics verified by inspectors;
- Evaluation of results in test certificates presented by economic operators;
- Preparation and reporting on follow-up and enforcement actions;
- Allocation on CO detectors under GPSD (LVD) or CPR;
- Consolidation of results;
- Preparation of final workshop;
- Discussion of the main outcomes of the Joint action to be mentioned in the final report.

Annex 2: Checklists for CO Detectors

The check list that was developed in the frame of the Joint Action is shown below:

CHECKLIST- CO detector	Check List Reference No.: **SI/**	Date of inspection:				
Name, type of product:						
Product supplied by battery or main:	☐ Battery ☐ Main	Price (EUR):				
Retailer (last distributor):						
Number of products placed on the market by		From:	To:			
Manufacturer or brand:						
Importer:						
Distributor:						
Documentation attached to the checklist:	☐ EC Declaration of conformity ☐ Instructions ☐ Test report ☐ Other:					
1. Product labelling (**durable label** on detector):						
	The examination of data on the product labelling	Point in the EN 50291-1:2010	Is the situation observed correct?			
1	**CE marking** in prescribed form and size (at least 5mm)? Correct: CE False: CE ce CE CE CE CE	Annex II- Regulation 765/2008 Annex V- Directive 2004/108/EC (EMC) Annex III- Directive 2006/95/EC (LVD)	☐	YES	☐	NO
2	Name of the manufacturer or supplier or brand?	4.7.2. a	☐	YES	☐	NO
3	Name of detector, model number (if any), the type of gas to be detected ?	4.7.2. b	☐	YES	☐	NO
4	Is marking under "3" visible in typical installed position?	Point 6 of EN 50291-1/A1:20012	☐	YES	☐	NO
5	The number of standard EN 50291-1?	4.7.2. c	☐	YES	☐	NO
6	The type of detector, A or B?	4.7.2. d	☐	YES	☐	NO
7	The serial number or manufacturing date code of detector?	4.7.2. e	☐	YES	☐	NO
8	For mains powered detectors the electricity supply voltage and frequency and maximum power consumption?	4.7.2. f	☐	YES	☐	NO
9	For battery powered detectors the type and size of replacement batteries?	4.7.2. g	☐	YES	☐	NO
10	Indication of the maximum lifetime recommended for detector?	4.7.2. h	☐	YES	☐	NO
11	Is marking under "10" visible in typical installed position?	Point 6 of EN 50291-1/A1:20012	☐	YES	☐	NO
12	The symbol for the separate collection of waste electrical and electronic equipment (?) 	Directive 2002/96/EC, annex IV; 4.2 of EN 50419	☐	YES	☐	NO
2. Caution (**on label attached** to the detector), for example:						
	The examination of data on the product labelling	Point in the EN 50291-1:2010	Is the situation observed correct?			
13	Caution: Read these instructions carefully before operating or servicing?	4.7.3	☐	YES	☐	NO
3. Warnings (**on packaging**):						
	The examination of data on the product packaging	Point in the EN 50291-1:2010	Is the situation observed correct?			
14	Warning, that the detector should be installed by a competent person?	4.7.5, and in A1: 4.8.5.1	☐	YES	☐	NO
15	The relevant information regarding storage and transport?	4.7.5, and in A1: 4.8.5.1	☐	YES	☐	NO
16	The expected lifetime of the sensor if it could be affected by storage time and if different to the lifetime of the detector?	4.7.5, and in A1: 4.8.5.1	☐	YES	☐	NO
17	This detector is designed to protect individuals from acute effects of carbon monoxide exposure? It will not fully safeguard individuals with specific medical conditions? If in doubt consult a medical practitioner?	4.7.5, and in A1: 4.8.5.2	☐ ☐ ☐	YES YES YES	☐ ☐ ☐	NO NO NO
18	The symbol for the separate collection of waste electrical and electronic equipment (?) 	Directive 2002/96/EC, annex IV; 4.2 of EN 50419	☐	YES	☐	NO

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4. Instruction booklet or leaflet:						
	The examination of instruction booklet	Point in the EN 50291-1:2010	Is the situation observed correct?			
19	Are the instructions for installation, operation and checking provided with detector?	4.7.4	☐	YES	☐	NO
20	Are the instructions in a language understood by the consumer?	To be discussed- in national law?	☐	YES	☐	NO
Does this instructions contain at least:						
21	For mains powered detectors: operating voltage, frequency, fuse-rating (if any) and method of connection to the mains supply system?	4.7.4. a	☐	YES	☐	NO
22	For battery powered detectors: type and size of replacement batteries, normal operating life, battery replacement instructions?	4.7.4. b	☐	YES	☐	NO
23	Guidance for installing detectors and the warning that detector should be installed by a competent person?	4.7.4. c	☐	YES	☐	NO
24	Actions to take if detector alarms?	4.7.4. d	☐	YES	☐	NO
25	An explanation of all warning (visual and audible)?	4.7.4. e	☐	YES	☐	NO
26	A list of materials that could affect the reliability of the detector (paints, cleaning fluids, vapours or gases, etc.)?	4.7.4. f	☐	YES	☐	NO
27	Warning of the risk of electric shock or malfunction if the detector is tampered with?	4.7.4. g	☐	YES	☐	NO
28	Instructions on the use of any relevant test procedure supplied with detector?	4.7.4. h	☐	YES	☐	NO
29	The expected lifetime of detector?	4.7.4. i	☐	YES	☐	NO
30	For type A: (instructions on the use and characteristics of the output signal)?	4.7.4. j	☐	YES	☐	NO
31	Range of operating temperature and humidity of the room?	4.7.4. k	☐	YES	☐	NO
32	The alarm conditions?	4.7.4. l	☐	YES	☐	NO
33	Description of the effects of CO on the human body, and a statement that the detector does not protect against chronic effects of CO exposure, and that the detector will not fully safeguard individuals at special risk?	4.7.4. m	☐	YES	☐	NO
34	Warning that installation of detector does not replace the proper installation, use and maintenance of heating appliances, including adequate ventilation and exhaust system?	4.7.4. n	☐	YES	☐	NO
5. EC Declaration of conformity:						
	The examination of EC declaration of conformity	Directive 2004/108/EC (EMC)	Is the situation observed correct?			
35	Does the EC declaration of conformity contain:					
36	A reference to this Directive 2004/108/EC (EMC)?	art. 2 of Annex IV	☐	YES	☐	NO
37	An identification / description of the detector to which it refers (type, batch, serial number or any other information for the identification)?	art. 2 of Annex IV	☐	YES	☐	NO
38	The name and address of the manufacturer and, where applicable, the name and address of his authorised representative in the Community?	art. 2 of Annex IV	☐	YES	☐	NO
39	A dated reference to the specifications under which conformity is declared to ensure the conformity of the detector with the provisions of EMC Directive ?	art. 2 of Annex IV	☐	YES	☐	NO
40	The date of that declaration?	art. 2 of Annex IV	☐	YES	☐	NO
41	The identity and signature of the person empowered to bind the manufacturer or his authorised representative?	art. 2 of Annex IV	☐	YES	☐	NO
For mains powered detectors shall declaration include also:		Directive 2006/95/EC (LVD)				
42	Reference to the harmonised standards?	art. B of Annex III	☐	YES	☐	NO
43	The last two digits of the year in which the CE marking was affixed?	art. B of Annex III	☐	YES	☐	NO
44	Sample taken for further physical testing in the laboratory?		☐	YES	☐	NO
	How may pieces of sample taken? ☐ 3 pieces of one sample ☐ other (pls indicate how many)……					
Comments:						
Signature of the economic operator:		Name and signature of inspector:				

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Annex 3: Guidelines On How To Exchange Information on CO Detectors

Introduction

The Joint Action (JA) has chosen the maximum variety of CO detectors on the market to be sampled by each of the participating MS. Considering the characteristics of the products under examination it was not possible to indicate a specific brand or model to be sampled.

Furthermore, no precautions for the risk of double sampling should be considered.

The reasons are as follows:

- The lack of deep knowledge concerning the brands, models and trading chains;
- The very large number of different products, distribution channels, etc.

The outcome of the joint sampling might confirm or not the above mentioned choices, which are based on assumptions and basic evaluation of the market.

Why to exchange information

During the sampling period it is considered essential to have a punctual evidence on the different products that have been selected. This will be done by the Task Coordinator by means of a spread sheet (Deliverable D10DE) that will be:

- Made available to all participants in a specific folder in the folder concerning the JA2012 - CO Detectors in drop box;
- Circulated to all members after each revision takes place

What information to exchange and how

The Check List (form D8.2.1 DE Checklist for CO detectors) has been developed considering different sections:

0. Number of the check list, data of economic operator and on the type of product

The check list shall be numbered with the two letters code of the country (e.g. NL for Netherlands)/the progressive numbering of the check list with two digits/other alphanumeric digits if needed by the members (e.g. reference to the product or to the sampling data or internal filing, etc.)

Example: NL/01/CO 2013.09.26

1. Product labelling (durable label on detector)
2. Caution (on label attached to the detector)
3. Warnings (on packaging)
4. Instruction booklet or leaflet
5. EC Declaration of conformity

Items from 1 to 5 shall be checked by the involved Inspector who shall duly fill-in the check list

Samples selected

This section shall indicate if samples have been selected and, if yes, the number of samples that have been selected for the given model.
This info is needed for the correct management of the tests and the relationship with the laboratory that will carry out the tests.
For the selection of samples to be tested the following criteria shall be considered (listed for info and not in order of importance):

- Low price
- “Poor” quality
- No third party certification marks (e.g. BSI Kitemark, VDE, IMQ, etc.)
- Missing or wrong information on the label (section 1 of the Check list) or on the Cautions and Warnings (sections 2 and 3 of the Check list) or on the instructions (section 4 of the check list) or on the CE Declaration (section 5 of the check list)

A summary of the products to be sent to the laboratory is collected by filling-in the form in Annex A.

Photo of the CO detector inspected

Each photo shall have size of max 0,5 Mb and maximum 3 pictures per check list (one front, one back and eventually the packaging with the detector) shall be used. Pictures shall be imported in the check list as image and not copied and pasted.
It is advised that the picture shall include a ruler to allow a precise definition of the dimension of the CO detector.

Products to be inspected

Members should inspect and try to make available checklists for minimum 10 - maximum 15 models of CO detectors for domestic and similar use (that may be used also on caravan, boats, etc.) per Country.
The types of CO detectors to be inspected should be:

- ~65% models battery supplied
- ~35% models network supplied plug-in type. No detectors that are designed to be connected to the fixed wiring with a set of terminals shall be selected.
  Note: the reason is that the JA will concentrate on the devices that are supposed to be the more largely diffused on the market and that can be easily installed by a normal user.

Amongst the 15 models some shall be of type A(*), some of type B(*) and some for both CO and smoke detection, even if the tests on the latter will not be under this JA.

(*) See as follows the definition of type A and of Type B as given by the standard:

- type A – to provide a visual and audible alarm and an executive action in the form of an output signal that can be used to actuate directly or indirectly a ventilation or other ancillary device, and

- type B – to provide a visual and audible alarm only.

Each member shall select for testing at least 3 models amongst those covered by the check lists.

One check list shall be filled-in for each of the CO detectors examined.
All check lists shall be filled-in in English and shall be sent to the Task Coordinator in a workable format (preferably excel).

Check lists shall be filled-in with the name of the member in the JA. Should they indicate other representatives of the Member State, an inclusion request shall be delivered for each additional representative.

When some parts are not applicable, the boxes yes or no shall not be checked

After sampling, the participants shall send every check list by e-mail to the Task Coordinator (TC) Fabio Gargantini at Fabio.gargantini@prosafe.org.

An overview of the situation of the selection of products and on the relevant verifications and tests will be made available for each meeting of the Joint Action by updating the spread sheet (Deliverable D10DE).

Annex 4: Basic Risk Assessment Result

The result of the risk assessment for two basic scenarios is shown as follows:

Scenario 1 : Other consumers - Toxic gas

Product hazard

Hazard Group:	Toxicity
Hazard Type:	Toxic gas

Consumer

Consumer Type:	Other consumers - Consumers other than vulnerable or very vulnerable consumers

How the hazard causes an injury to the consumer

Injury scenario:	A CO detector does not work correctly. CO leakage occurs from an incomplete combution source with a sleeping person in the room. Insufficient ventilation allows CO concentration to build up. The person doesn't notice. The person is intoxicated and dies with a sleeping person in the room. Insufficient ventilation allows CO to build up. The person doesn't notice. The person is intoxicated and dies.

Severity of Injury

Injury:	Poisoning from substances (ingestion, inhalation, dermal)	
Level:	4	Irreversible damage to nerve system Fatality

Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	CO-concentration increases to dangerous amount	1
Step 2:	CO detector does not work properly and does not give alarm	0.2
Step 3:	User does not realise and is intoxicated	0.8

Calculated probability:	0.160000000
Overall probability:	> 1/10
Risk of this scenario:	Serious risk

Scenario 2 : Other consumers - Toxic gas

Product hazard

Hazard Group:	Toxicity
Hazard Type:	Toxic gas

Consumer

Consumer Type:	Other consumers - Consumers other than vulnerable or very vulnerable consumers

How the hazard causes an injury to the consumer

Injury scenario:	A CO detector does not work correctly (clause 5.3.16 Alarm sound level. The detector is faulty and does not alarm). CO leakage occurs. The person doesn't notice the alarm. The person is intoxicated and dies

Severity of Injury

Injury:	Poisoning from substances (ingestion, inhalation, dermal)	
Level:	4	Irreversible damage to nerve system Fatality

Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	CO-concentration increases to dangerous amount	1
Step 2:	The user does not recognise the alarm	0.95
Step 3:	User does not realise and is intoxicated	0.8

Calculated probability:	0.760000000
Overall probability:	> 1/2
Risk of this scenario:	Serious risk

Annex 5: Planning of the Joint Action and list of Deliverables

Activity	Deliverable	Deadline	Month 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
CO and Smoke Detectors																														
Planning of activities	D5.1DE	Month 6																												
Kick-off and planning meeting	D5.2DE	Month 6				15-16																								
2nd project meeting	D6.1DE	Month 6							9																					
3rd project meeting	D6.2DE	Month 8									26																			
4th project meeting	D6.3DE	Month 11																						15						
5th project meeting	D6.4DE	Month 14																									20			
6th project meeting	D6.5DE	Month 17																												
Set up means for exchange of information	D7DE	Month 8																												
Sampling schemes	D8.1DE	Month 8																												
Checklist and/or guidelines	D8.2DE	Month 8																												
Test criteria	D9.1DE	Month 8																												
Memo describing tendering process and result																														
Joint testing	D9.2DE	Month 12																												
Market surveillance activities	D10DE	Month 18					Preliminar y survey																							
Follow-up activities	D11.1DE	Month 24																												
Final Technical Report	D11.2DE	Month 24																												