Joint Action 2015 GPSD

Joint Market Surveillance Action on GPSD Products 2015 co-funded by the European Union
Grant Agreement N° 705038 – JA2015 - GPSD



Final Technical Report, Household Electrical Appliances 1

Covering the period 1 April 2016 – 31 March 2018

Co-funded by
the European Union

PROSAFE
Joint Actions
Best Practice

August 2018

Disclaimer

This report arises from the Joint Market Surveillance Action on GPSD Products – JA2015, which received funding from the European Union in the framework of the 'Programme of Community Action in the field of Consumer Policy (2014-2020)'.

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Abbreviations

ANEC	**The European Consumer Voice in Standardisation**
ASAE	Food and Economic Safety Authority, Portugal
CECED	European Committee of Domestic Equipment Manufacturers
CENELEC	European Committee for Electrotechnical Standardization
CTI	Czech Trade Inspection Authority
CRPC	Consumer Rights Protection Centre, Latvia
DoC	Declaration of Conformity
DoC's	Declarations of Conformity
EEA	European Economic Area
EFTA	European Free Trade Association
EMS	Department of Electrical and Mechanical Services, Cyprus
EU	European Union
GPSD	General Product Safety Directive
ICSMS	Information & Communication System for Market Surveillance
LVD ADCO	Low Voltage Directive Administrative Co-operation Working Group
LVD WP	Low Voltage Directive Working Party
JA2015	Joint Market Surveillance Action coordinated by PROSAFE with an implementation time-frame of April 2016 up to June 2018
MCCAA	Malta Competition Consumer Affairs Authority, Malta
MSA	Market Surveillance Authority
MSAs	Market Surveillance Authorities
PROSAFE	Product Safety Forum of Europe
RAG	European Commission's Risk Assessment Guidelines tool
RAPEX	Community Rapid Information System
SNESB	The Swedish National Electrical Safety Board, Sweden
STI	Slovak Trade Inspection, Slovakia
TUKES	Finnish Safety and Chemicals Agency, Finland

Executive Summary

This report presents the activities undertaken and the results achieved in the Product Activity Electrical Appliances 1 of "Joint Market Surveillance Action on GPSD Products 2015 – JA2015", co-funded by the European Union under the Grant Agreement N° 705038. The Activity focussed on household blenders, mixers and toasters and its primary goals were to:

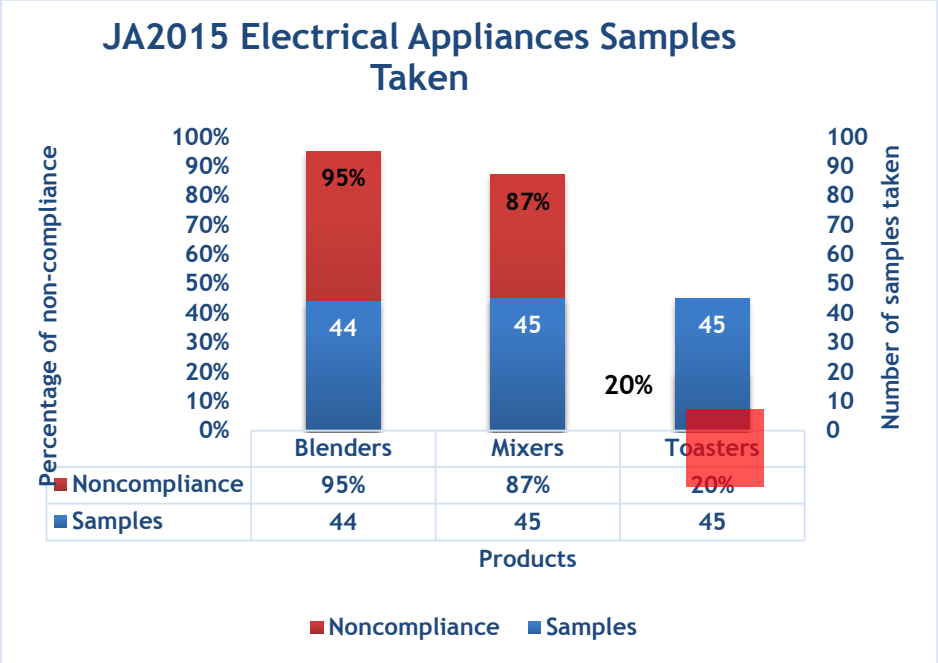
- Build on the work undertaken within previous Joint Actions and increase the safety of products;
- Ensure that these household electrical appliances are safe in use;
- Ensure that instructions for use, technical files and declarations of conformity are adequate
- Continue to support the harmonisation of market surveillance across the EEA within this product sector.

The nine participating Market Surveillance Authorities (MSAs) involved in this Activity under PROSAFE's coordination, were Bulgaria, Cyprus, the Czech Republic, Finland, Latvia, Malta, Portugal, Sweden and Slovakia. Turkey was involved as an observer. The approach was typical in that the participating MSAs undertook to:

- Study their national markets and use these data for determining sampling criteria;
- Sample from online retailers as well as shops with intelligence or assistance from customs;
- Submit products for testing at an accredited testing laboratory in the European Union;
- Carry out risk assessments using the European Commission's RAG tool;
- Undertake follow-up actions including administrative activities on nonconforming products;
- Report on the follow-up actions taken to improve safety for consumers.

In total, **134 products were sampled and tested**: 44 blenders, 45 mixers and 45 toasters. Formal objections to the standards for blenders, mixers and toasters are in place. **Only 27 out of 134 products examined were fully compliant with the test programme**, which comprised of limited testing to the versions of EN 60335-2-9 and EN 60335-2-14 that were in place before the formal objections were enacted. **The majority of the samples had multiple nonconformities, and 95% of blenders, 87% of mixers and 20% of toasters, as tested, were noncompliant as per figure below**. Overall, 32% of samples had major nonconformities or medium risks, 21% had serious nonconformities or high risks, and 24 RAPEX notifications were made.

Figure 1 Summary test results JA2015 Electrical Appliances



The test results for products failing the testing requirements were subject to risk assessments using the European Commission's Risk Assessment Guidelines (RAG) tool, and the European Commission document 2015-IMP-MSG-15. Templates were provided to the risk assessment group and the participating MSAs took enforcement actions on many of the models tested.

A high proportion of Declaration of Conformity documents requested were received from economic operators, but approximately half were not drawn up in accordance with the EU Low Voltage Directive 2014/35/EU . Test reports were requested from economic operators for those products that failed the test programme. None of the test reports received for blenders was compliant with the assessment criteria, which was a series of questions relating to the administrative and technical content of the reports. Approximately 20% of test reports received for blenders and toasters were compliant, but overall the compliance rate was very low.

An attempt was made to determine a parallel between the price of a given product and overall product safety. This proved very difficult, as the small overall quantity does not give a statistically valid picture of the market. As the majority of samples purchased were in the lower price range, the non-conformity rate tends to follow the number of samples purchased. However, some risks were identified in higher priced samples, which suggest that targeting only lower priced samples may not necessarily be the optimum strategy for market surveillance authorities.

Overall, it can be concluded that the aims and objectives of the Joint Action were met.

Caution!

The above results 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 testing focussed on those safety requirements that have the largest impact on consumer safety.

Introduction

This is the final technical report prepared for the Household Electrical Appliances Activity of the Joint Market Surveillance Action on GPSD Products 2015 – JA2015, Grant agreement N° 705038.

The main objectives of the JA2015 were to continue to create conditions whereby MSAs can cooperate successfully on market surveillance activities, and to co-ordinate a number of product activities exposing the results of the activities to the largest number of MSAs possible.

The entire JA2015 project was carried out by 35 MSAs from 27 Member States of the European Union and the European Economic Area (Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden and the United Kingdom, plus Iceland and Norway).

Household electrical appliances (HEA) are being addressed as a product group for the first time in a joint action that checks their safety in use. Blenders, mixers and toasters are estimated to be present in more than 80% of European households. There have been more than 10 RAPEX notifications in the last three years. Problems identified include poor user instructions, accessible live parts, burns from hot surfaces, cuts from rotating blades and materials with insufficient resistance to heat and fire.

For these reasons, Market Surveillance Authorities (MSAs) from the nine participating European Economic Area (EEA) countries agreed to cooperate in this project on household electrical appliances and funding for the examination and testing of the products was granted.

1 Background Information

1.1 Participating Market Surveillance Authorities

The Activity was undertaken by nine MSAs from nine Member States of the European Union (EU): Bulgaria, Cyprus, the Czech Republic, Finland, Latvia, Malta, Portugal, Sweden and Slovakia.

- BG - State Agency for Metrological and Technical Surveillance (SAMTS);
- CY – Department of Electrical and Mechanical Services (EMS);
- CZ – Czech Trade Inspection Authority (CTI);
- FI – Finnish Safety and Chemicals Agency (TUKES);
- LV – Consumer Rights Protection Centre (CRPC);
- MT – Malta Competition Consumer Affairs Authority (MCCAA);
- PT – Food and Economic Safety Authority (ASAE);
- SE – The Swedish National Electrical Safety Board (SNESB);
- SK – Slovak Trade Inspection Central Inspectorate (STI);

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

1.2 Overview of Key Staff in the Activity

The Activity Leader was James Spiteri, MCCAA, Malta.
The Activity Leader was supported by the PROSAFE Activity Coordinator, Andrew Gordon.

1.3 Objectives

The objectives of the HEA Activity were to ensure that blenders, mixers and toasters on the EU market were safe and carried the appropriate warnings and instructions. The project focussed mainly on:

- Continuing to support harmonisation of market surveillance across the EEA within this product sector;
- Taking corrective actions if and where necessary;
- Removing unsafe products from the market;
- Undertaking market surveillance with some involvement from Customs Authorities;
- Coordinating with stakeholders such as ANEC, CECED and CENELEC/TC61;
- Developing a priority-list of household electrical appliances to be targeted in future joint actions.

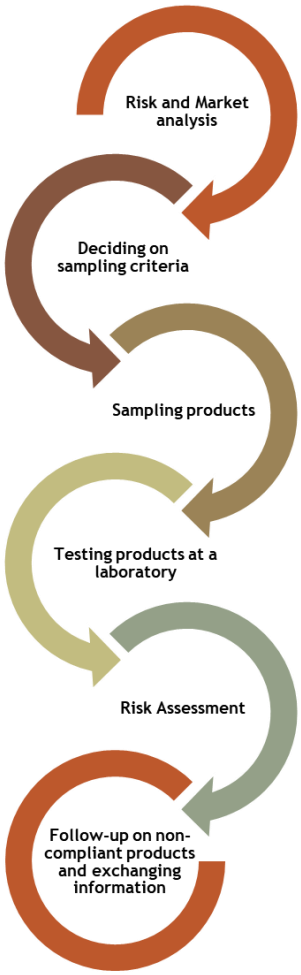
1.4 Budgeted Activities

The total testing budget for the Activity allowed the testing of 135 samples, i.e., 45 blenders, 45 mixers and 45 toasters.

1.5 The Phases of the Activity

The Activity was a market surveillance campaign organised in the following five phases:

Figure 2 The stages of a market surveillance campaign



1. **Deciding on sampling criteria**

Each of the 9 MSAs presented information on their market surveillance activities for blenders, mixers and toasters. This included product testing, consumer complaints, relationships with customs, incident data, sales bans and RAPEX notifications etc. This provided a basis for deciding upon the sampling criteria. It was agreed that MSAs would sample freestanding blenders, hand-held mixers and metal or plastic body toasters (2 or 4 slice).
Further details are given in Table 1.

2. **Sample products**

Using the initial data gathered above, the Activity determined how many samples would be purchased by each MSA. It was agreed to sample 5 of each product type, i.e. 5 blenders, 5 mixers and 5 toasters. This implied that the MSAs would visit importers, wholesalers, retailers and use the internet to collect products. This phase was coordinated and reported back to the Activity. The sampling was staggered to avoid the possibility of duplicating samples.

3. **Test products at a laboratory**

The Activity issued a public call for tender and selected an appropriate testing laboratory. MSAs were responsible for submitting products to the testing laboratory. Owing the large number of samples and the importance of following a tight plan for the testing activities, it was decided to use two laboratories following a tender procedure. One was in charge of testing blenders and mixers, and the other toasters.
The laboratories provided a test report for each product upon completion of all the testing.

4. **Risk assessment**

The MSAs agreed upon a common approach to the application of the RAPEX guidelines for each product to ensure that the resulting assessments were harmonised to the greatest extent possible. The MSAs then assessed the risk for the products applying the agreed approach. Risk assessment included the application of European Commission document 2015-IMP-MSG-15, as there is a risk of property damage. This document contains risk assessment methodology that builds upon the RAPEX Guidelines. Furthermore, the document assists MSAs when they assess the compliance of products that are subject to Union harmonisation legislation such as the EU Low Voltage Directive 2014/35/EU. It extends the RAPEX Guidelines, developed within the framework of the GPSD in two respects, namely to make sure that the broader categories of public risk protected under EU harmonisation legislation can be taken into account, and to reflect the specific legal requirements in harmonised products. It requires the use of abstract levels of severity of harm when evaluating damage to property.

5. **Follow-up on non-compliant products and exchange of information on follow-up activities**

The MSAs consulted the economic operators on the results from the risk assessment, agreed on appropriate measures and followed-up to ensure that agreed measures were properly implemented. The resulting measures were reported to the entire Joint Action and shared with all participants and stakeholders.

1.6 Timeline for Activity

May 2015	JA2015 start date
June 2016	Kick Off Meeting
July 2016	JA2015 Launch Meeting
October 2016	2nd Physical Meeting with stakeholder participation and planning of activities
October 2016	Presentation of the Activity in Brussels to the LVD WP
November 2016	1st virtual meeting including means for exchange of information, sampling schemes developed, guidelines for best practice of market surveillance activities, development of test criteria and product checklists
December 2016	2nd virtual meeting
January 2017	3rd Physical Meeting - tender document finalised, sampling form completed, testing plan finalised
March 2017	3rd virtual meeting, responses to call for tender, contracts signed by testing laboratories
May 2017	Samples to be taken from the market and sent to the laboratories, testing begins
October 2017	4th Physical Meeting (at testing laboratory), where day one was spent discussing test results and day two included a conference call with the other testing laboratory and the preparation of risk assessments
November 2017	Testing completed, and test reports circulated
January 2018	5th Physical Meeting, follow up actions and draft final report discussed
April 2018	JA2015 Final Conference, final actions completed.
May-June 2018	The final technical report is completed.

2 Setting up the Product Activity

2.1 Tendering Process for Testing Laboratories

A list of potential testing laboratories within the EEA was prepared by the MSAs and the Activity Coordinator. These were a combination of testing laboratories from the former Nando list of Notified Bodies under the EU Low Voltage Directive, and those laboratories either known to or identified by MSAs and the Activity Coordinator. A total of nine laboratories were selected.

A call for tender was prepared by the Activity Coordinator in association with all the MSAs involved using PROSAFE's standard tendering procedures and detailing all tests/methods required. This was sent to the nine testing laboratories via email and published on the PROSAFE website[1]. The European Commission was also informed about the open call.

Four out of nine laboratories did not reply by the deadline, whilst one came shortly after. As a result, only four laboratories qualified for a further assessment. From the laboratories qualified, two out of four provided the most suitable responses and had recent experience with the GPSD Joint Actions, which made it no longer necessary to visit the laboratories beforehand. Instead the Activity Coordinator held a conference call with one of the laboratories to present the testing and reporting arrangements in more detail. The structure and content of the test reports were discussed at length along with reporting the results on non-standard testing for the blenders.

To ensure the best chance of meeting the testing delivery term with 134 samples it was decided to commission both laboratories and split the testing throughput as follows: blenders and mixers would be tested by one contractor and toasters by another.

2.2 Selecting Products, Sampling

The Activity agreed initially to sample 135 products, i.e. 45 blenders, 45 mixers and 45 toasters. The nine participating MSAs were tasked with buying five samples of each product type. Only one sample of each blender and mixer were required. Two samples of each toaster model were required as the second sample would be subject to the destructive abnormal operation tests. One of the participating MSAs was unable to obtain a fifth blender sample, therefore a total of 44 blenders were sampled, leaving the total number of products to 134.

Input from stakeholders at the beginning of the activity suggested the need to sample from online sellers, as those products tend to be lower priced, and from less established brand names. The participating MSAs confirmed that in their experience, samples from long established brands tend to be safer. Noncompliant products in their experience are typically those in the lower price range. The participating MSAs therefore agreed to mostly target products from the lower end of the market where there is a higher potential for noncompliance. The aim was to sample at least 50% of the products from online sellers. These should, where possible, be products that are available from exclusive online sellers only, rather than the "hybrid" type such as established high street shops that also have an online presence.

Some toaster examples on the European market have an egg boiling function and even a radio module, but it was agreed to avoid such samples because of complexity of the legislative areas applicable.

The Activity agreed to sample traditional two-slice or four-slice metal or plastic bodied toasters. Mixers would be the hand-held type with removable beaters rather than the stick type drinks mixers. Blenders would be freestanding types and not the hand-held type having a small blade.

These sample types are consistent with those appearing on RAPEX and those chosen by participants in their market surveillance activities. A sampling memo was prepared by the Activity Coordinator giving examples of which product types to sample, and these are shown in Table 1.

[1] www.prosafe.org

Table 1 Product types targeted by the joint action

BLENDERS	MIXERS	TOASTERS
		
Freestanding type only	**Hand-held type with detachable inserts only**	**Metal or plastic bodied (2 or 4 slice)**

Table 2 shows the total number of samples supplied by the participating MSAs. This number was based on the available budget (as per the Grant Agreement).

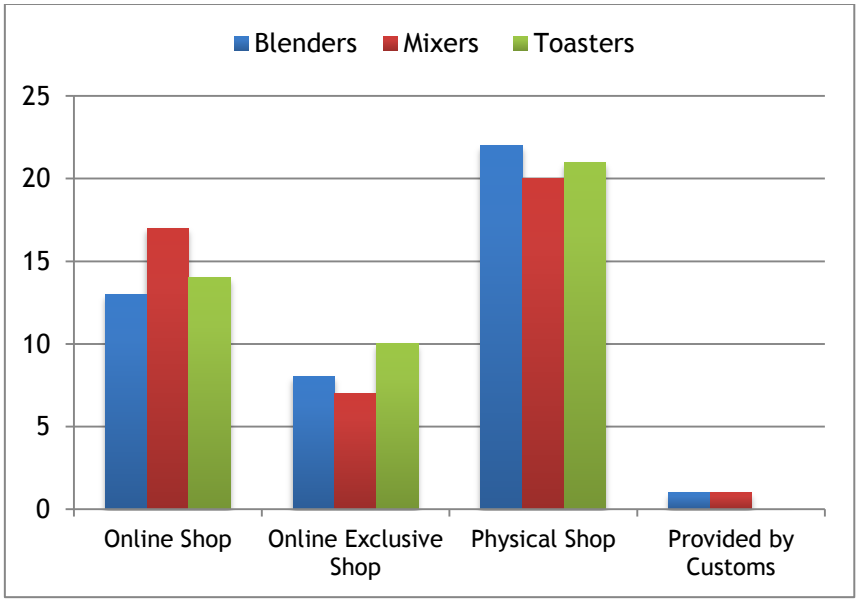
Table 2 Number of samples supplied by responsible authority of each product type

	BG	CY	CZ	FI	LV	MT	PT	SE	SK	TOTAL
BLENDERS	5	5	5	5	5	5	5	5	4	44
MIXERS	5	5	5	5	5	5	5	5	5	45
TOASTERS	5	5	5	5	5	5	5	5	5	45
TOTAL	15	15	15	15	15	15	15	15	14	134

The Activity aimed to sample an adequate number of products from online sellers. The MSAs tried to target exclusive online sellers and not only the hybrid type that have a high street shop and an online presence. Figure 1 gives a breakdown of the sampling by seller or other means. Out of the 134 products sampled:

- 48% of blenders were from online sellers with 18% trading exclusively online;
- 50% of blenders were shop bought and 2% provided by customs;
- 54% of mixers were from online sellers with 16% trading exclusively online;
- 44% of mixers were shop bought and 2% provided by customs;
- 53% of toasters were from online sellers with 22% trading exclusively online;
- 47% of toasters were shop bought.

Figure 3 Breakdown of sampling by seller or other means



The MSAs also recorded the Country of Origin for each product type. These are shown in Figures and 4,5,6..

Figure 4 Country of origin for 44 blender samples

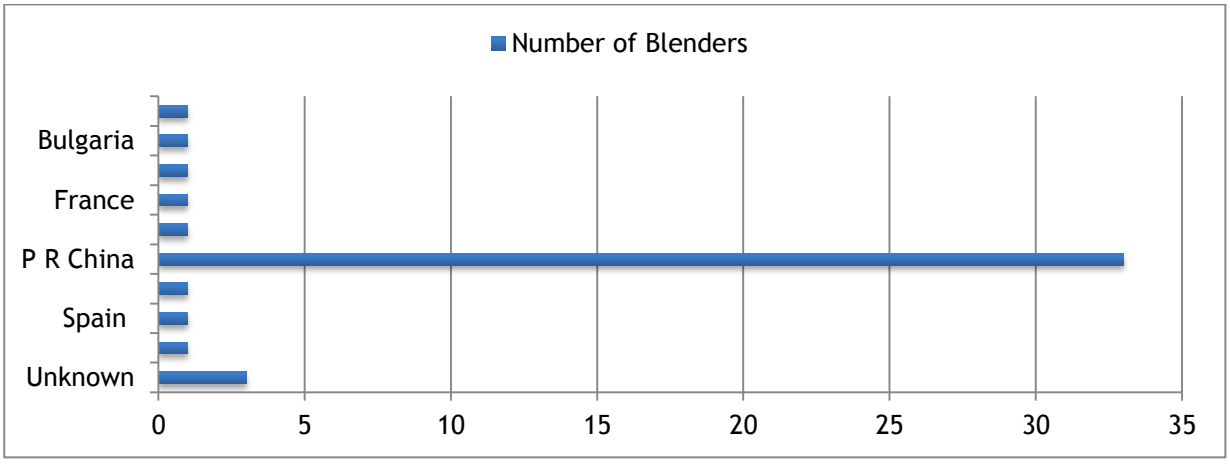


Figure 5 Country of origin for 45 mixer samples

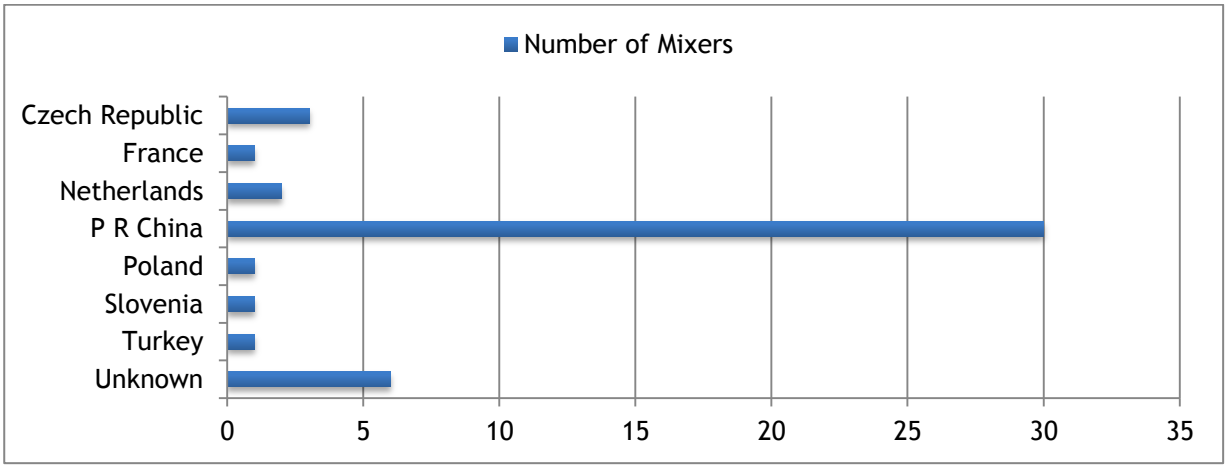
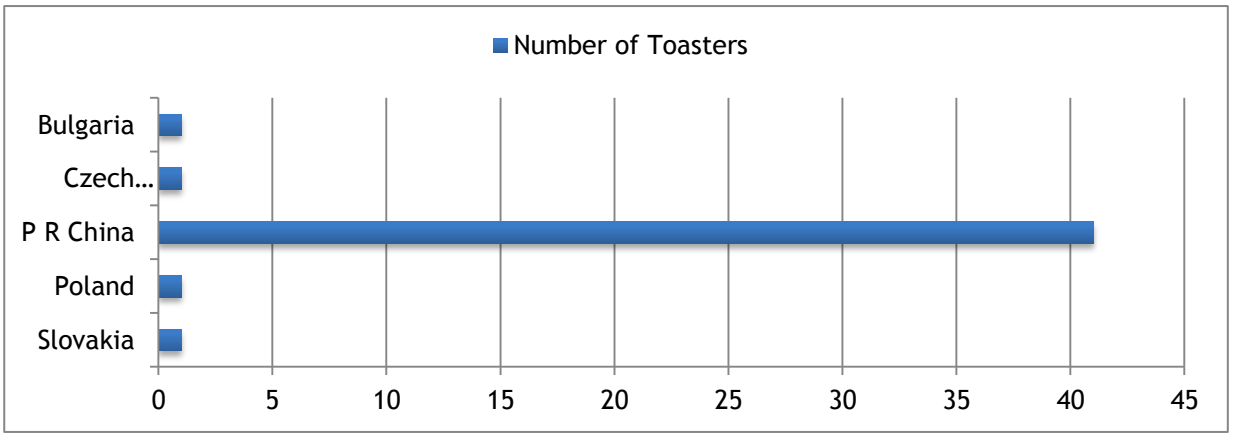


Figure 6 Country of origin for 45 toaster samples



3 Testing

3.1 The Testing Program

The laboratories were advised that the purpose of testing in this Joint Action is to identify dangerous products so that a MSA can decide whether a specific blender, mixer or toaster poses a risk to consumers and a corrective action needs to be taken against it.

The laboratories were requested to test each sample under a predefined test program using the appropriate harmonised standards that were in place before the formal objections were enacted. A maximum testing duration of six hours was proposed.

The laboratories were asked to structure the testing so that potentially destructive testing was done at or near the end of the testing programme. Non-standard testing was proposed by ANEC during the planning stages of the activity to evaluate stopping times for blenders and the temperature of accessible surfaces that might be touched by vulnerable users.

The three product types are within the scope of the EN 60335 standard series, which cover the safety of household and similar electrical appliances. The Part 1 standard EN 60335-1 contains general requirements and is therefore common to all products within the EN 60335 standard series.

The Part 2 standards contain particular requirements for a corresponding household and similar electrical appliance. As the Part 2 standards supplement or modify the Part 1 standard, both Part 1 and Part 2 standards must be used together to ensure coverage of essential electrical safety tests. With the standards having over 30 clauses with numerous sub-clauses, there are over 200 tests available.

Therefore, testing was based on a limited test programme targeted towards tests that are most likely to identify potential hazards. Formal objections were in place, and remain in place at this time, for EN 60335-2-9 and EN 60335-2-14. The testing laboratories agreed to apply the editions of those standards that were harmonised before the formal objections were enacted.

Table 3 shows the clauses and testing criteria that were applied to the products, and those that were excluded are shown as cells containing ‘x’. Full details of the test programme for each product type are given in Appendix I.

Blenders and mixers were tested to:

- EN 60335-1:2012 + A11:2014 — Household and similar electrical appliances – Safety – Part 1: General requirements;
- EN 60335-2-14:2006 + A1:2008 + A11:2012 + A12:2016 — Household and similar electrical appliances – Safety – Part 2-14: Particular requirements for kitchen machines.

Toasters were tested to:

- EN 60335-1:2012 + A11:2014 — Household and similar electrical appliances – Safety – Part 1: General requirements;
- EN 60335-2-9:2003 + A1:2004 + A2:2006 + A12:2007 + A13:2010/AC:2012 — Household and similar electrical appliances – Safety – Part 2-9: Particular requirements for grills, toasters and similar portable cooking appliances.

Table 3 Standard clauses and testing criteria selected for blenders, mixers and toasters

Clause	Title/Criteria	Blenders	Mixers	Toasters
7	Marking and instructions	✓	✓	✓
8	Protection against access to live parts	✓	✓	✓
10	Power input and current	✓	✓	×
11	Heating	✓	✓	✓
13	Leakage current & electric strength at operating temperature	✓	✓	✓
15	Moisture resistance	✓	✓	×
16	Leakage current and electric strength	✓	✓	✓
19	Abnormal operation	✓	✓	✓
20	Stability and mechanical hazards	✓	✓	✓
21	Mechanical strength	✓	✓	✓
22	Construction	✓	✓	✓
23	Internal wiring	✓	✓	✓
24	Components	✓	✓	✓
25	Supply connection and external flexible cords	✓	✓	✓
28	Screws and connections	×	×	✓
27	Provision for earthing	×	×	✓
29	Clearances, creepage distances and solid insulation	✓	✓	✓
30	Resistance to heat and fire	✓	✓	✓

Upon completion of testing, the laboratories prepared a test report for each sample. The report included the test results obtained, highlighting all non-conformities to the particular clauses. Supporting photographs, as well as comments or other relevant clarifications were included.

3.2 Results

3.2.1 Results of testing all blender, mixer and toaster samples

Table 4 gives an overview of the non-conformities found for the 134 samples that were tested, including the percentage of samples having multiple non-conformities. Figure 7 provides an overview of the same testing results but against the standard clauses.

Table 4 Overview of testing results for blenders, mixers and toasters

Product Type	N° of samples tested	N° of nonconforming samples	Failure rate	Percentage of samples with multiple nonconformities
Blenders	44	42	95%	79%
Mixers	45	39	87%	66%
Toasters	45	26	58%	20%

Figure 7 Overview of testing results for each product type against standard clauses

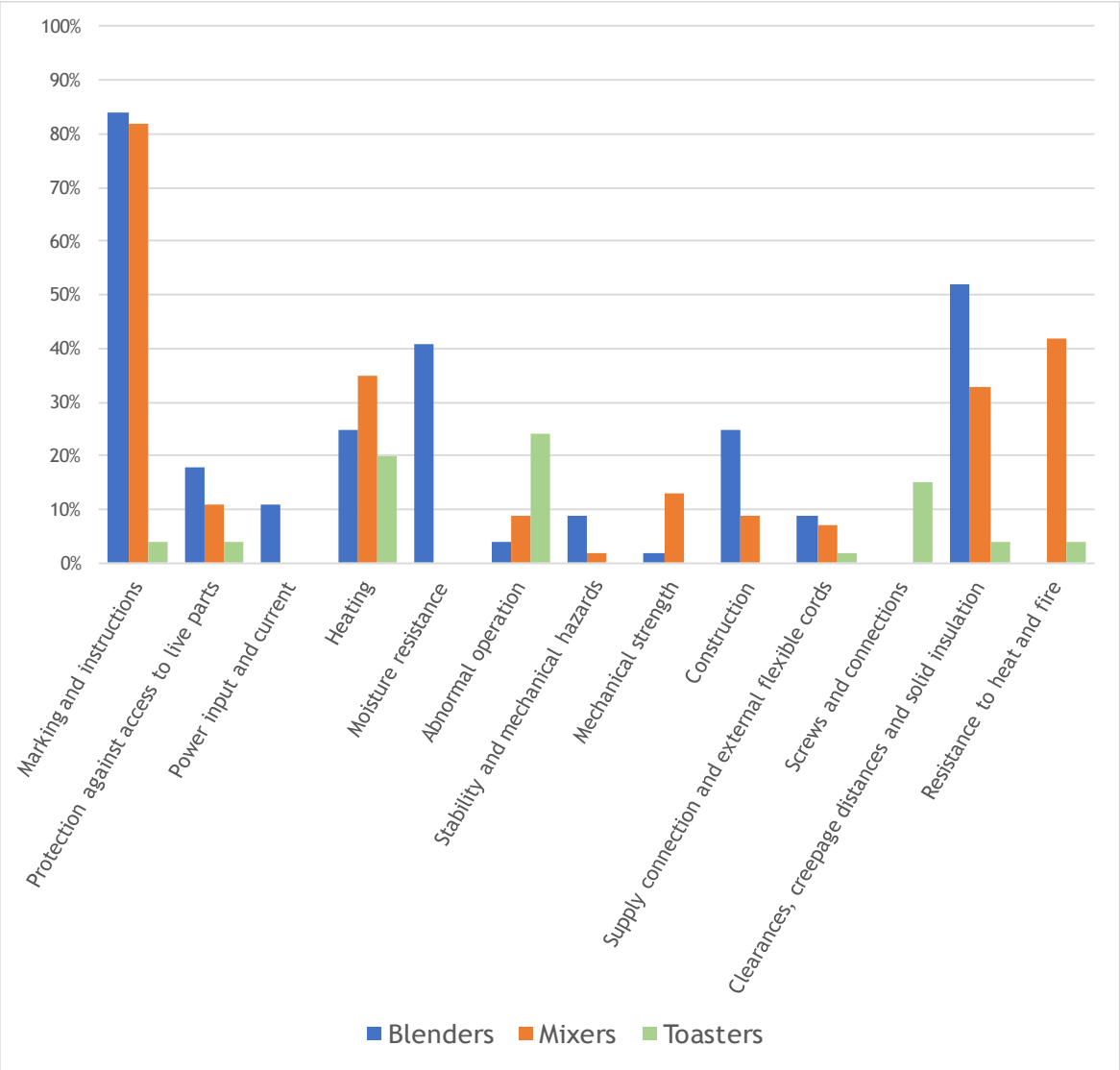


Table 5 gives an overview of the percentage of non-conforming samples against the standards clauses applied and their test criteria. Not all standards clauses were applied equally and those that were excluded are shown as cells containing 'x'.

Table 5 Percentage non-conformities against standard clauses per product type

Clause	Title/Criteria	Blenders	Mixers	Toasters
7	Marking and instructions	84%	82%	4%
8	Protection against access to live parts	18%	11%	4%
10	Power input and current	11%	0%	×
11	Heating	25%	35%	20%
13	Leakage current & electric strength at operating temperature	0%	0%	0%
15	Moisture resistance	41%	0%	×
16	Leakage current and electric strength	0%	0%	0%
19	Abnormal operation	4%	9%	24%
20	Stability and mechanical hazards	9%	2%	0%
21	Mechanical strength	2%	13%	0%
22	Construction	25%	9%	0%
23	Internal wiring	0%	0%	0%

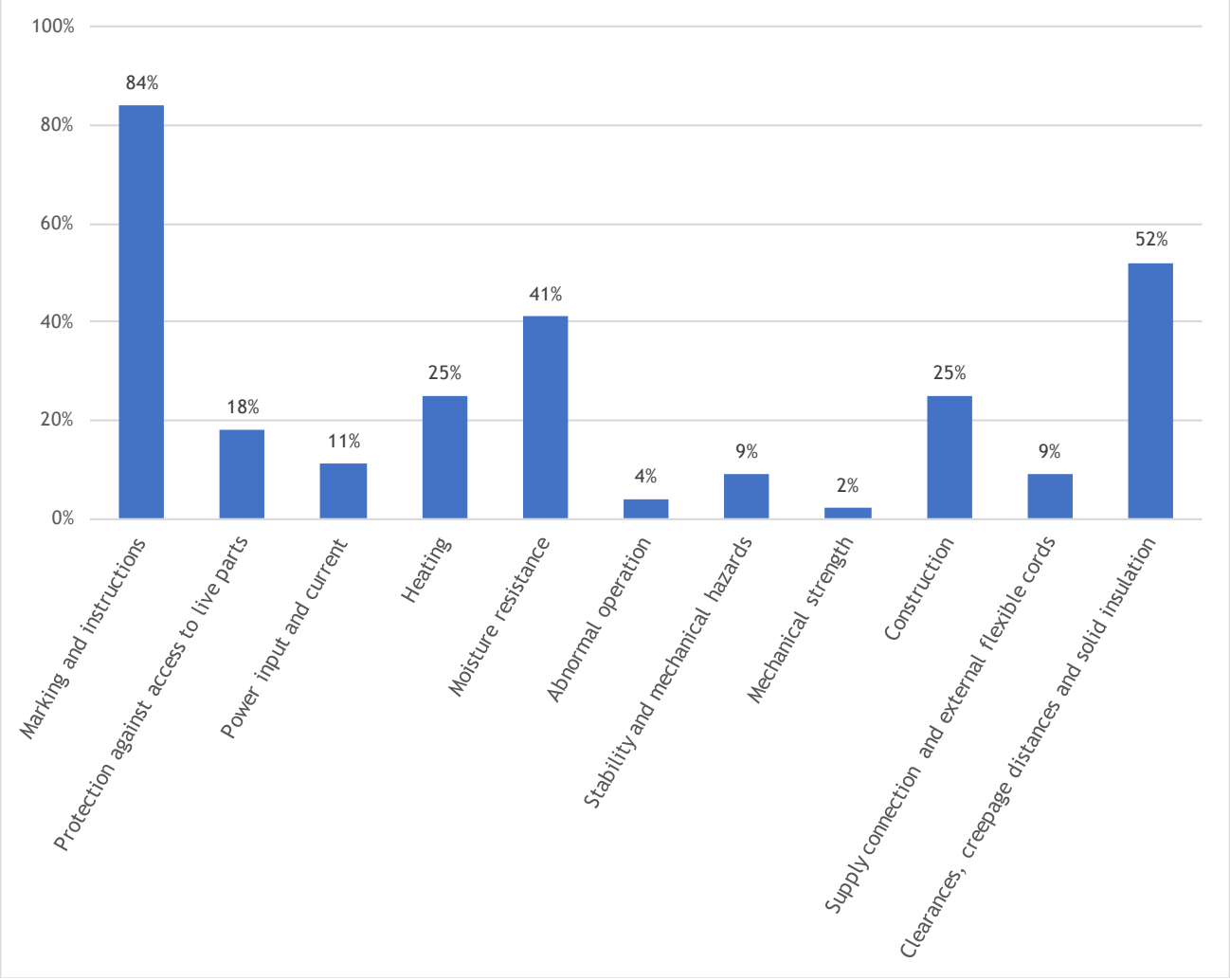
Clause	Title/Criteria	Blenders	Mixers	Toasters
24	Components	0%	0%	0%
25	Supply connection and external flexible cords	9%	7%	2%
28	Screws and connections	×	×	15%
27	Provision for earthing	×	×	0%
29	Clearances, creepage distances and solid insulation	52%	33%	4%
30	Resistance to heat and fire	0%	42%	4%

The results of testing for each product type are now considered in more detail. Non-conformities are explained where necessary in an attempt to identify how nonconformity to the standards leads to an actual risk.

3.2.2 Results of testing 44 blenders to EN 60335-2-14

Overall, only 2 of the 44 samples passed the testing programme with no departures being noted. Figure 8 shows the percentage of non-compliant blender samples against the standard clauses applied during testing.

Figure 8 Percentage of non-compliant blender samples against standard clauses



Out of the 42 samples that failed, 79% had multiple nonconformities against clauses in the applied standard, as shown in Table 6.

Table 6 Total number of blender samples with multiple non-conformities

	2 clauses	3 clauses	4 clauses	5 clauses	6 clauses
N° of Blender samples with multiple nonconformities	9	12	8	5	1

The non-conformities are explained in more detail below and overall the problems identified included:

- Absence of information in user instructions concerning use of the product by children and other vulnerable users;
- Basic insulation covering live parts accessible with the standard test finger;
- Power input significantly above the 20% allowable deviation;
- Overheating of motor windings during the heating test;
- Excessive and dangerous leakage current after overfilling of the blender;
- Absence of motor protection in the event of a locked rotor;
- Overturning when inclined at an angle of 10°;
- Cutting blades accessible with test probe having a circular stop face of 125 mm diameter;
- Poorly retained blender couplings requiring minimal removal force thereby exposing basic insulation;
- Incorrect fitted plug;
- Supply cord anchorage poorly secured;
- Internal creepage distances well below allowable limits;
- Accessible voltage after removal of the plug from the socket outlet.

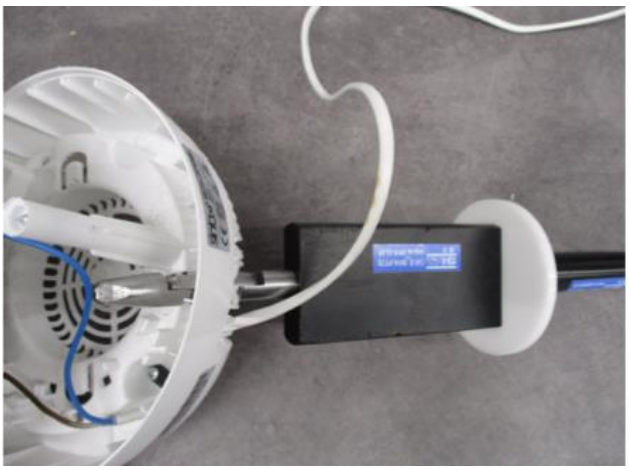
The majority of the user instructions were missing standard requirements. Information concerning use by children and other vulnerable users was missing from 32 of the 37 non-conforming user instruction manuals. This is information whereby *"appliances can be used by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and if they understand the hazards involved", and the "appliance shall not be used by children".*

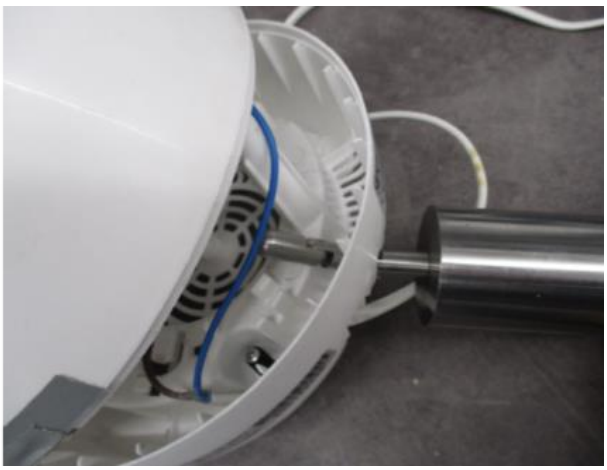
The height of characters for warnings in user instructions should be a least 3.0 mm. In 25 of the 37 non-conforming user instructions the height was below this limit. In 11 cases the character height was less than 2.0 mm. The absence of important safety information and potentially illegible warnings may not necessarily be considered as safety critical, but in certain circumstances it might give rise to a hazard.

The blenders in this case are a class II appliance where protection against electric shock does not rely on basic insulation alone. Additional safety precautions are necessary, such as double or reinforced insulation. Eight samples had insufficient protective measures.

Basic insulation covering internal live wires was in contact with the accessible conductive enclosure in the majority of these cases. The control knob on one sample was coated with conductive paint and basic insulation of internal wiring was in contact with the control knob. In one case, basic insulation of internal wiring was accessible through openings with the standard adult and child test probes, as shown in Figure 9.

Figure 9 Adult test probe and child test probe access through openings in blender enclosures

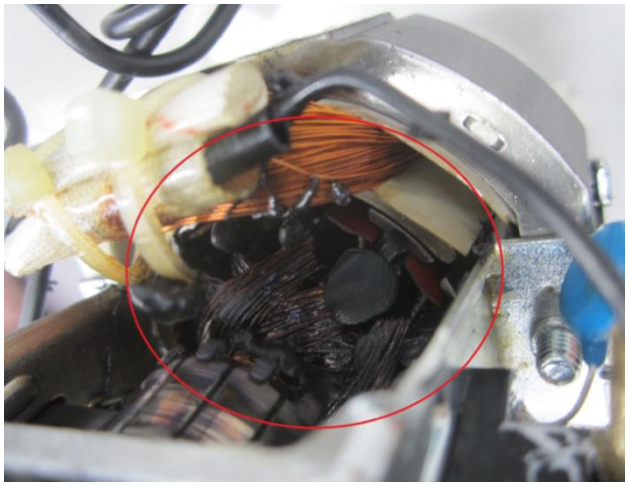




The measured input power for 5 of the samples exceeded the rated input power by between 26% and 37%. As an example, in the worst case, the measured input power at a voltage of 230 V was 546 W against the manufacturer's rated power of the blender claiming to be 400 W. The deviation between the measured and rated input power is +37% against an allowable limit of +20%.

During the heating test the blenders are run at normal operation for three minutes, and this operation is carried out ten times. Eleven of the samples failed the heating test. None of the eleven samples was able to withstand the ten operations. Three samples stopped working after the third cycle with no visible signs of damage. Two samples stopped working after the sixth and eighth cycles respectively at which point the thermal motor protectors operated. The stator or motor winding in three samples ignited with obvious enclosure deformation. In three other samples there were signs of motor overheating. Figure 10 shows the extent of the motor overheating and enclosure deformation.

Figure 10 Motor winding overheating and the resulting enclosure deformation



With the liquid container of the blender completely filled with a saline solution and operated for 15s the leakage current must not exceed 0.35 mA. A total of 18 samples failed this test with measured leakage current dangerously high in several samples ranging from 11 mA to 78 mA, thereby posing an electric shock hazard.

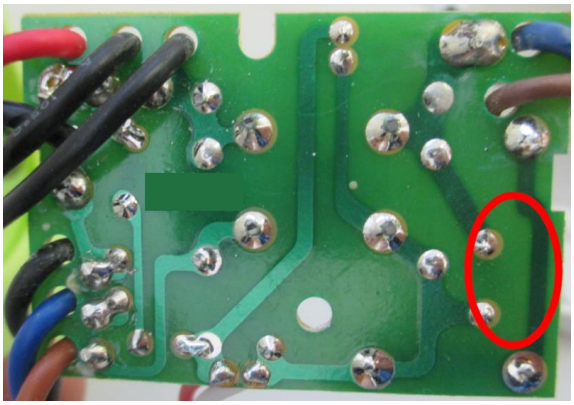
One sample had no reliable protection device, as its motor winding ignited during an abnormal operation test where the motor's rotor is locked. One other sample in a short circuit condition relies on the operation of the protective device in the household's fixed wiring. In each case, the samples are not adequately constructed to avoid the risk of fire.

Two samples overturned when inclined at an angle of 10º. The cutting blades in two samples were accessible with the test probe B having a circular stop face with a diameter of 125 mm, as shown in Figure 11.

Figure 11 Access to rotating blades with test probe

The blender coupling for eight of the samples was easily removed. Such parts should withstand a pull force of 30 N. The force required to remove the coupling in each case ranged from 1 N to 24 N. Basic insulation was accessible after removal of the coupling, as shown in Figure 10.

Figure 12 Blender couplings with exposed basic insulation of the motor shaft



In particular, internal creepage distances for supplementary insulation were below allowable limits in 23 of the 44 blender samples. In most cases, the distances were less than half the allowable distance, typically a measured 2.0 mm against a requirement of 4.0 mm. This clause is also linked to other clauses such as protection against access to live parts and abnormal operation. Creepage distance is the shortest distance along the surface of insulation between two conductive parts or between a conductive part and the accessible surface. The example shown right is where the insulation between live and neutral on the printed circuit board measured 3.0 mm against an allowable 3.2 mm. When subjected to a short circuit, it was apparent that the sample was not fitted with a suitable protection device. Protection therefore has to be provided by the household's electrical installation, which is not permitted by the standard. Further reductions in creepage distances can be expected over time particularly with the possibility of moisture ingress when using the blender. Overall, these nonconformities were considered as a medium severity.

Three samples were provided with plugs suitable for a class I appliance, which has provision for protective earthing. The blenders in this case were all class II and should therefore be supplied with a corresponding fitted plug.

The user might contact the plug pins when removing (disconnecting) the fitted plug from the socket outlet. In two cases the voltage measured at the plug pins one second after plug disconnection was 109 V and 292 V respectively. The standard allows a disconnection voltage of 34 V. The user is therefore at risk of incurring an electric shock when removing the plug from the socket outlet in normal use.

3.2.3 Non-standard testing of blenders

Stopping time for blenders

Given the formal objection against EN 60335-2-14 for blenders, ANEC asked the Activity to measure cutting blade stopping times. Standard EN 60335-2-14, clause 20.112 has a requirement for the cutting blade of food processors to stop within 1.5 s after the lid has been opened or removed. There is no such requirement for blenders. The laboratory was asked to measure the stopping time of the cutting blade of blenders under test.

Overall, the cutting blade in (36%) 16 of the 44 blenders examined did not stop within 1.5s. For the majority of those samples the cutting blade stopped within 2s. But a stopping time for the cutting blade in two samples examined was 3.5s and 3.6s respectively.

Interlock for blenders

Standard EN 60335-2-14 does not require an interlock between the lid and the main switch for blenders. Nonetheless, the laboratory was asked to determine whether an interlock was present.

Overall, (73%) 32 of the 44 blenders did not have an interlock, consequently the cutting blade continues to rotate when the lid is removed, and the mains switch is in the on position.

3.2.4 Results of testing 45 mixers to EN 60335-2-14

Overall, 6 of the 45 samples passed the testing programme with no departures being noted. Figure 13 shows the percentage of non-compliant mixer samples against standard clauses applied during testing.

Of the 39 samples that failed, 66% had multiple non-conformities against clauses in the applied standard, as shown in Table 7.

Figure 13 Percentage of non-compliant mixer samples against standard clauses

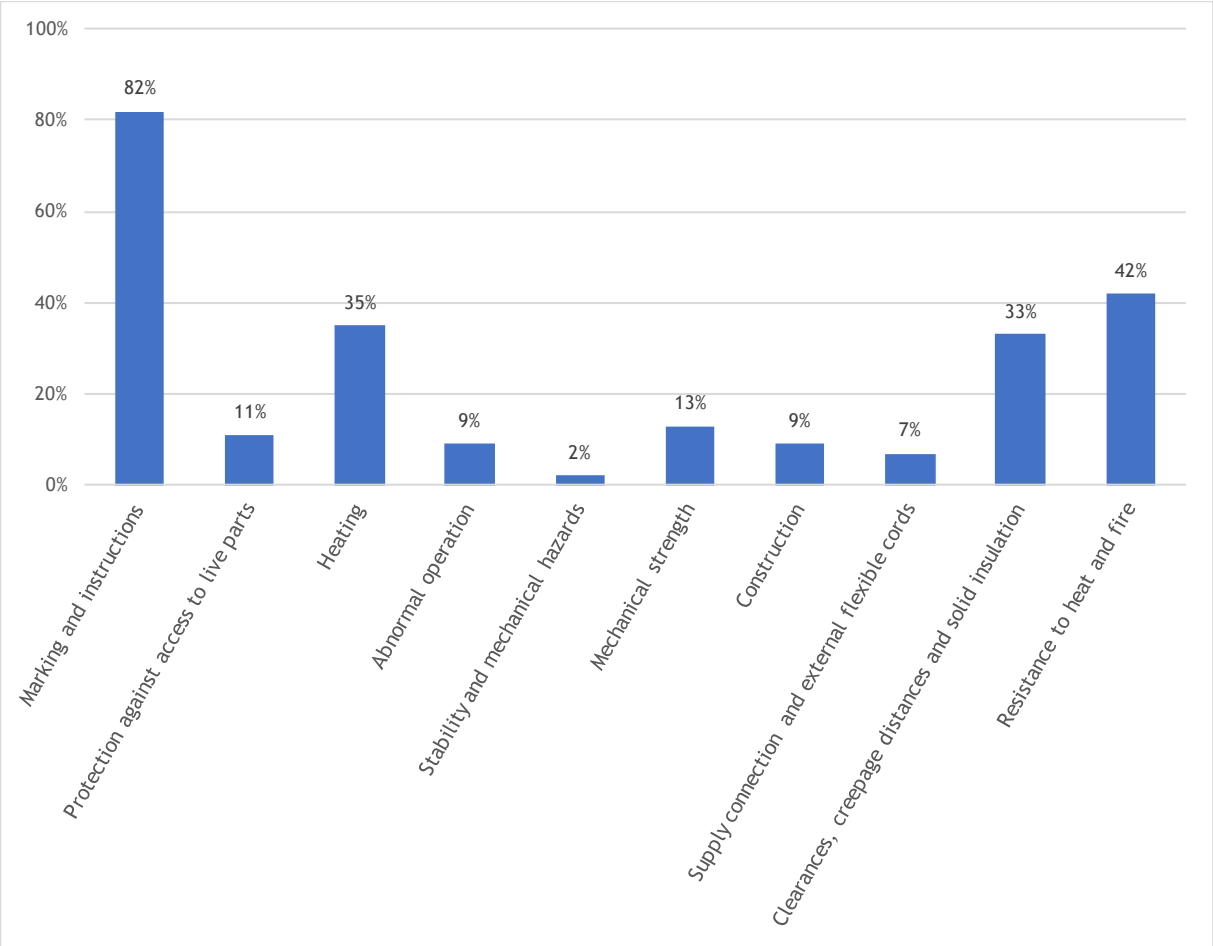


Table 7 Total number of mixer samples with multiple non-conformities

	2 clauses	3 clauses	4 clauses	5 clauses	6 clauses
Nº of Mixer samples with multiple non-conformities	8	9	7	5	1

The non-conformities are explained in more detail below and overall the problems identified included:

- Absence of several standard requirements in user instructions including the use of the product by children and other vulnerable users;
- Basic insulation covering live parts accessible with the test finger;
- Access to live parts of the motor connections with child test finger and test pin;
- Motors rendered inoperative during heating test;
- Excessive motor winding temperatures during heating test;
- Motor windings igniting during the heating test;
- Motor windings igniting during the locked rotor test;
- No reliable protection in the event of a locked rotor;
- Attachments detaching from the mixer at normal rotational speed;
- Accessible live parts after the drop test;
- Inadequate connection means for internal wiring;
- Incorrect fitted plugs;
- Internal creepage and clearance distances below allowable limits;
- Materials not sufficiently resistant to heat and fire.

Overall, 29 of the 37 nonconforming user instruction manuals were missing several standard requirements. These included largely the following:

(1) Information concerning use by children whereby *"appliances can be used by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and if they understand the hazards involved", and the "appliance shall not be used by children"*;

(2) The need to always disconnect the appliance from the supply if it is left unattended and before assembling, disassembling or cleaning;

(3) A warning to keep the appliance and its cord out of reach of children;

(4) A warning that care shall be taken when handling the sharp cutting blade, emptying the bowl and during cleaning;

(5) The need to switch off the appliance and disconnect from the supply before changing accessories or approaching parts that move in use; and

(6) A warning that the appliance is not to be used by children.

The height of characters for warnings in user instructions should be a least 3.0 mm. In 29 of the 37 nonconforming user instructions the height was below this limit. In 19 cases the character height was less than 2.0 mm or less. The absence of important safety information and potentially illegible warnings may not necessarily be considered as safety critical, but in certain circumstances it might give rise to a hazard.

The mixers in this case are a class II appliance where protection against electric shock does not rely on basic insulation alone. Additional safety precautions are necessary, such as double or reinforced insulation. Two samples had basic insulation, covering internal live wires, in direct contact with the accessible enclosure. In three cases live parts of the motor connection were accessible with the standard adult and child test probes, and the test pin, as shown in Figure 14.

Figure 14 Access to live parts through openings with standard test probes

During the heating test the mixers are run at an elevated voltage for five minutes. Sixteen of the samples failed the heating test. Six samples stopped working before completing the test. The stator winding ignited in four of the samples and motor winding temperatures were significantly higher than the allowable standard temperature-rise limits.

Four samples failed the locked rotor test and in each case the motor winding ignited. Further examination revealed the absence of any reliable protection against a locked rotor condition. This was considered as a serious failure.

Live parts or basic insulation covering live parts were accessible in six samples after the drop test. The images in Figure 14 show the extent of access with the standard probes.

Figure 15 Accessible live parts after the standard drop test

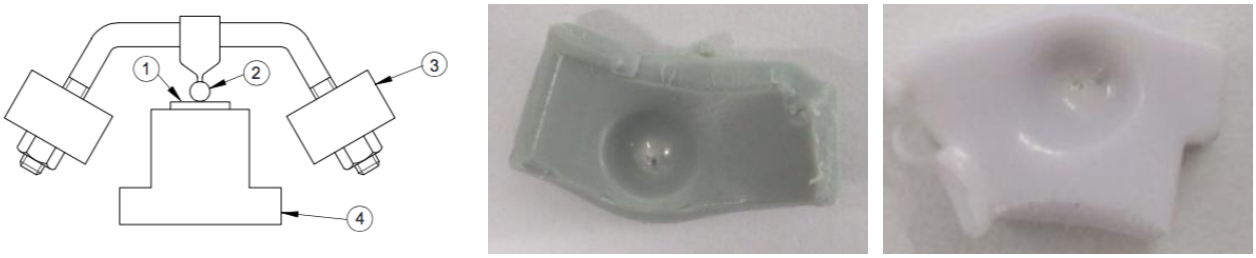
Poor internal connections were observed for two samples where soldered motor connections were not provided with an additional fixing means. If the connections break free in normal or foreseeable conditions of use, the live wires could reduce creepage and clearance distances. In one case the live wires could fall through an opening and become hazardous live where the user is at risk of incurring an electric shock.

The mixers in this case were all class II and should therefore be supplied with a corresponding fitted plug. In two cases the fitted plug was for a class I appliance. Voltage measured at the plug pins one second after plug disconnection was 37 V and 50 V respectively. The standard allows a disconnection voltage of 34 V. The user is, therefore, at risk of incurring an electric shock when removing the plug from the socket outlet in normal use.

Internal creepage distances for supplementary insulation in particular were below allowable limits in 10 of the 45 mixer samples. This clause is also linked to the clause dealing with protection against access to live parts, as the sample failing that clause also had insufficient creepage distances thereby compromising the necessary protection against access to live parts. Overall, the reductions in creepage distances were considered a medium risk with the exception of the one sample where live parts were accessible, which was considered a serious risk.

External parts of non-metallic material used in the construction of mixers must have adequate resistance to heat and fire. If their deterioration could cause the electrical appliance to fail to comply with the standard, such parts are subject to the ball pressure test. A test specimen is placed in a heating chamber set at 125ºC. The ball pressure apparatus shown far-left in Figure 16 is placed on the test specimen for approximately 60 minutes. Item 1 is the test specimen, item 2 the pressure ball, item 3 the weight and item 4 the test specimen support. After this time the test specimen is immersed in water and the diameter of the indentation is measured. The diameter must not exceed 2 mm. In total, 19 samples failed this test. For 17 of those samples the impression was more than double the allowable diameter of 2 mm. The images in Figure 14 show the extent of the indentations.

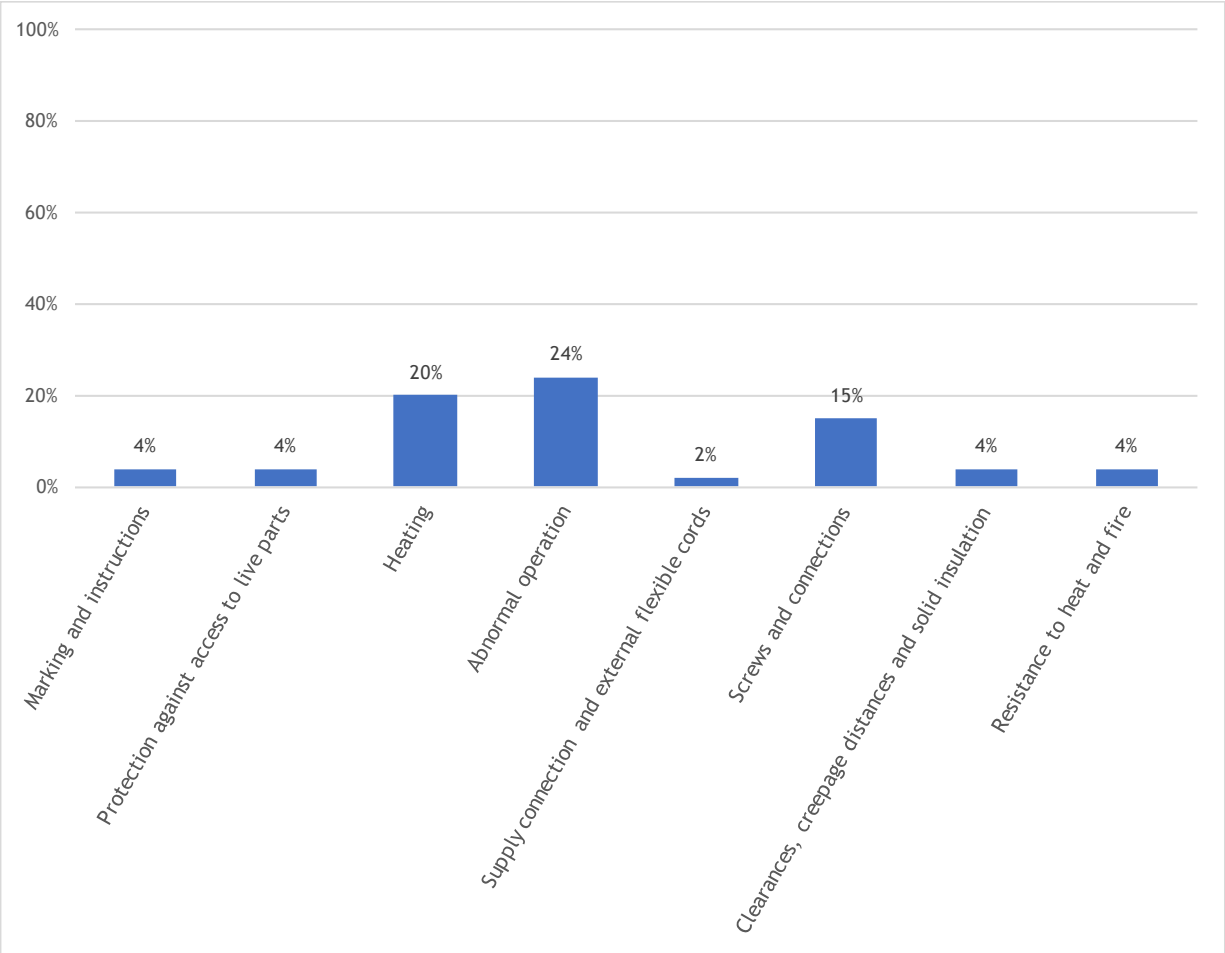
Figure 16 Ball pressure apparatus and indentation in samples exceeding 2 mm in diameter



3.2.5 Results of testing 45 toasters to EN 60335-2-9

Overall, only 19 of the 45 samples passed the testing programme with no departures being noted. Figure 15 shows the percentage of non-compliant toaster samples against standard clauses applied during testing.

Figure 17 Percentage of non-compliant toaster samples against standard clauses



Out of the 26 samples that failed, 20% had multiple non-conformities against clauses in the applied standard, as shown in Table 8.

Table 8 Total number of toaster samples with multiple non-conformities

	2 clauses	3 clauses	4 clauses	5 clauses	6 clauses
N° of Toaster samples with multiple non-conformities	7	0	2	0	0

The non-conformities are explained in more detail below and overall the problems identified included:

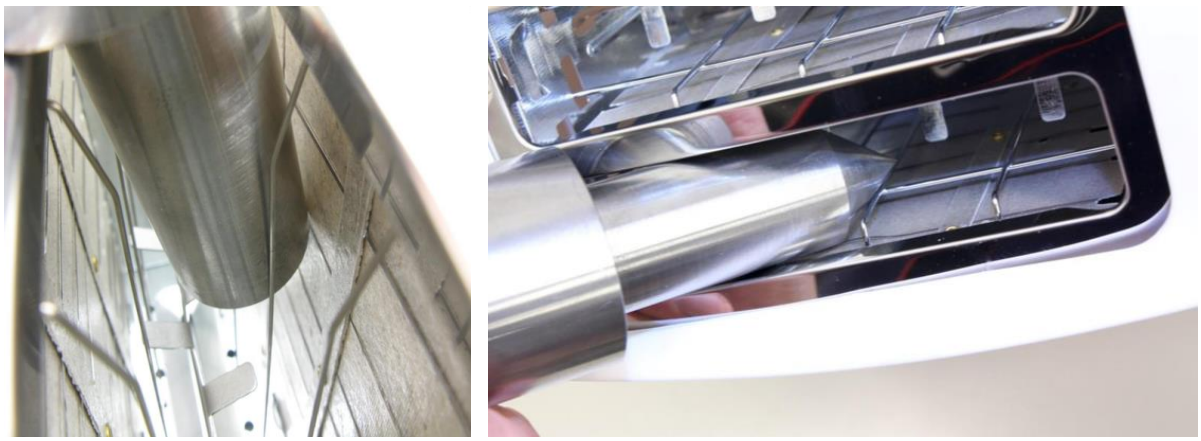
- Absence of information in user instructions concerning use of the product by children and usage near or below combustible material;
- Access to visibly glowing heating elements with test probe;
- Accessible metal surfaces exceeding the burn threshold temperature in CLC Guide 29 in several cases;
- Accessible live parts and insufficient electrical insulation properties after the jammed ejector mechanism test;
- Sample fire during jammed ejector mechanism test;
- Poor internal construction with wires in contact with sharp edges;
- Inadequate supply cord earth connection;
- Creepage distances below allowable limits;
- Enclosure materials not sufficiently resistant to heat and fire.

The majority of the user instructions were satisfactory. Warnings about using the toaster near or below combustible items were missing from user instructions supplied with two samples. The user instructions

for one of those samples was also missing a statement about use of the toaster by children aged 8 years and above, under certain circumstances.

Live parts of visibly glowing heating elements were accessible with the standard test probe in two samples, thereby posing an electric shock hazard. Figure 18 shows the extent of accessibility.

Figure 18 Access to toaster elements with standard test probe

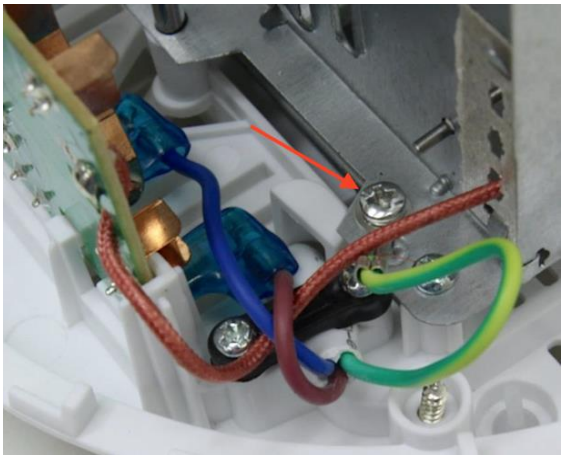


Overall, 9 of the 45 toaster samples failed the heating test. The insulation of the supply cord for one sample exceeded the allowable temperature by less than 5ºC, which was considered a medium failure. One sample had a coated metal enclosure, which exceeded the allowable surface temperature limit by 12ºC, and again this was considered a medium failure. The surface temperature of the accessible metal surface, measured 25 mm below the top surface in 7 of the 9 samples exceeded the allowable limit by 8ºC to 33ºC. Absolute surface measurements ranged from 76ºC to 111ºC. These measurements exceed the burn threshold specified in CENELEC Guide 29 for bare uncoated metal based on a contact time of 1 second (i.e., 64ºC to 70ºC).

The toasters were subjected to two abnormal operation tests. The first test involves loading the toaster with bread and the ejector mechanism is prevented from releasing while the supply voltage is maintained to the heating elements after the timer has completed its cycle. For the second test the toaster is operated without bread for six cycles of operation, and the test is carried out 500 times. The testing laboratory requested two samples of each toaster model for these tests, as they are potentially destructive. Some MSAs were unable to purchase a second sample. Priority was therefore given to the first test, where the ('jammed') ejector mechanism is prevented from releasing. In total, 45 samples were subjected to this test, and 35 additional samples were subjected to the test involving 500 operations without bread.

Nine samples failed the jammed ejector mechanism test. Live parts were accessible with the standard test probe in six of those samples after the test, as shown in Figure 17. One of those samples ignited with extensive damage to the enclosure, as shown in Figure 17. Six samples failed the second test with 4 samples rendered inoperative before 140 of the 500 operations. The remaining two samples failed after 250 and 440 operations. In those cases, there were no accessible live parts and the electrical insulation was intact.

Figure 19 Accessible live parts and fire damage after jammed ejector mechanism test



The screws used for the earth connection in toasters, with an example shown right, shall withstand 5 tightening actions at a specified torque of 0.4 or 0.5 Nm. The thread length must also be suitable for providing earthing continuity in thin section metal used in toasters. Seven samples had inadequate earth connections with most screws failing on the first of five tightening actions. The thread length was too short in three samples. These are significant failures, as the poor construction might result in the loss of a connection to the protective earthing circuit thereby removing the protection against electric shock.

Internal creepage and clearance distances between live parts of different polarity and from accessible surfaces to internal wiring were below allowable limits in two of the samples. These reductions in allowable distances were considered a medium risk.

External parts of non-metallic enclosures close to current carrying connections must be resistant to ignition and spread of fire. Such parts are subject to the glow-wire test at 750ºC. Flames were present in two samples beyond the allowable test duration of 60s. These were considered as significant failures, because the samples are not adequately constructed to avoid the risk of fire.

3.3 Conclusions of testing

Overall, only 27 of the 134 products examined were fully compliant. This shows that the sampling process was very effective with the MSAs using their extensive knowledge and experience in identifying potentially non-compliant products when sampling. Errors and standard omissions from user instructions accounted for a large percentage of the non-conformities. There were however a large number of non-conformities for each product type across several safety-critical clauses, such as protection against access to live parts, heating, abnormal operation, screws and connections and resistance to heat and fire. We highlight once again that these results do not represent the actual safety level of the European market.

4 Technical Documentation

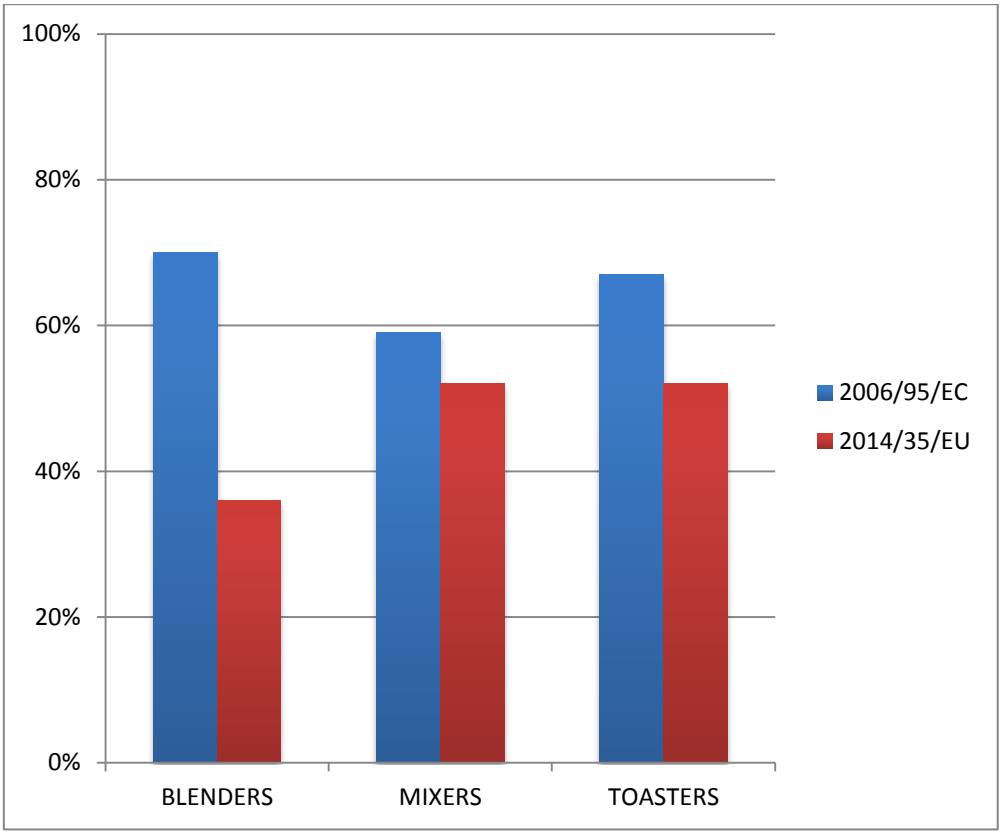
4.1 Introduction

As this is the first Joint Action involving household electrical appliances, it is important to know how the products are judged on EU Low Voltage Directive compliance by the manufacturer. The Joint Action was therefore tasked with verifying the EC declaration of conformity (DoC) and the relevant parts of the Technical File. The participating MSAs decided to request a copy of the DoC from the economic operator for all samples. Test reports demonstrating conformity with the applicable standards were requested only for those samples that failed the test programme. The DoC and test reports were assessed against a series of questions, which are explained in more detail below.

4.2 Declaration of Conformity

Economic operators for all samples examined were asked by each MSA to provide a copy of the declaration of conformity (DoC). The DoC's were declaring under directive 2006/95/EC or 2014/35/EU, or both. Overall, a total of 88% of DoC's were provided by the economic operators, which is a relatively high percentage. Figure 18 shows the percentage of DoC's received by each MSA for blenders, mixers and toasters that were compliant with the criteria comprised of a list of questions completed by each MSA, as shown in Tables 9 and 10.

Figure 20 Percentage of compliant DoC's received, as assessed by each MSA



4.2.1 Blenders

Overall, 70% of DoC's received for blenders declaring under directive 2006/95/EC were fully compliant. Non-compliant DoC's were missing a description of the electrical equipment, the identification of the responsible signatory and the last two digits of the year in which the CE marking was affixed.

Overall, 36% of DoC's received for blenders declaring under directive 2014/35/EU were fully compliant. Non-compliant DoC's were mostly missing a declaration of sole responsibility, the identification of the electrical equipment and the statement 'signed for and on behalf of'.

4.2.2 Mixers

Overall, 59% of DoC's received for mixers declaring under directive 2006/95/EC were fully compliant. Non-compliant DoC's were missing the name and address of the manufacturer or authorised representative, the identification of the responsible signatory and the last two digits of the year in which the CE marking was affixed.

Overall, 52% of DoC's received for mixers declaring under directive 2014/35/EU were fully compliant. Non-compliant DoC's were mostly missing the product model, type, batch or serial number, the full identification of the electrical equipment and the statement 'signed for and on behalf of'.

4.2.3 Toasters

Overall, 67% of DoC's received for toasters declaring under directive 2006/95/EC were fully compliant. Non-compliant DoC's were mostly missing the last two digits of the year in which the CE marking was affixed.

Overall, 52% of DoC's received for toasters declaring under directive 2014/35/EU were fully compliant. Non-compliant DoC's were mostly missing the product model, type, batch or serial number, a declaration of sole responsibility, the place and date of issue and the statement 'signed for and on behalf of'.

Table 9 Assessment questions for DoC's declaring under 2006/95/EC

Questions for the assessment of DoC's declaring under 2006/95/EC (Annex III)
Is the name and address of the manufacturer or authorised representative established within the Community present?
Is there a description of the electrical equipment?
Is there a reference to the harmonised standards?
Are references to the harmonised standards correct?
Are references to the specifications with which conformity is declared included?
Does the DoC contain the identification of the signatory who has been empowered to enter into commitments on behalf of the manufacturer or his authorised representative established within the Community?
Does the DoC contain the last two digits of the year in which the CE marking was affixed?

Table 10 Assessment questions for DoC's declaring under 2014/35/EU

Questions for the assessment of DoC's declaring under 2014/35/EU (Annex IV)
Does it contain the product model/product (product, type, batch or serial number)?
Does it contain the name and address of the manufacturer or his authorised representative?
Does it contain a statement that, "This declaration of conformity is issued under the sole responsibility of the manufacturer"?
Does it contain the object of the declaration (identification of electrical equipment allowing traceability; it may include a colour image of sufficient clarity where necessary for the identification of the electrical equipment)?
Does it state that the object of the declaration is in conformity with the relevant Union harmonisation legislation: LVD?
Does it include references to the relevant harmonised standards used or references to the other technical

specifications in relation to which conformity is declared?
Are references to the harmonised standards correct?
Does it contain the place and date of issue?
Does it state: Signed for and on behalf of?
Does it contain a signature?
Does it also contain the name and function of the signatory?

4.3 Test Reports

Economic operators for all samples that failed the test programme were asked by each MSA to provide a copy of the test report demonstrating conformity with the applicable standards. Figure 21 shows the percentage of test reports received by each MSA that were compliant and non-compliant with the criteria, which was a list of questions assessed by each MSA, as shown in Table 11. In each case, the majority of the reports were missing critical component information, and rating label images did not match those on the actual sample tested. Further analysis of the evaluation process is provided in Appendix II.

Figure 21 Percentage of non-compliant & compliant test reports received, as assessed by MSAs

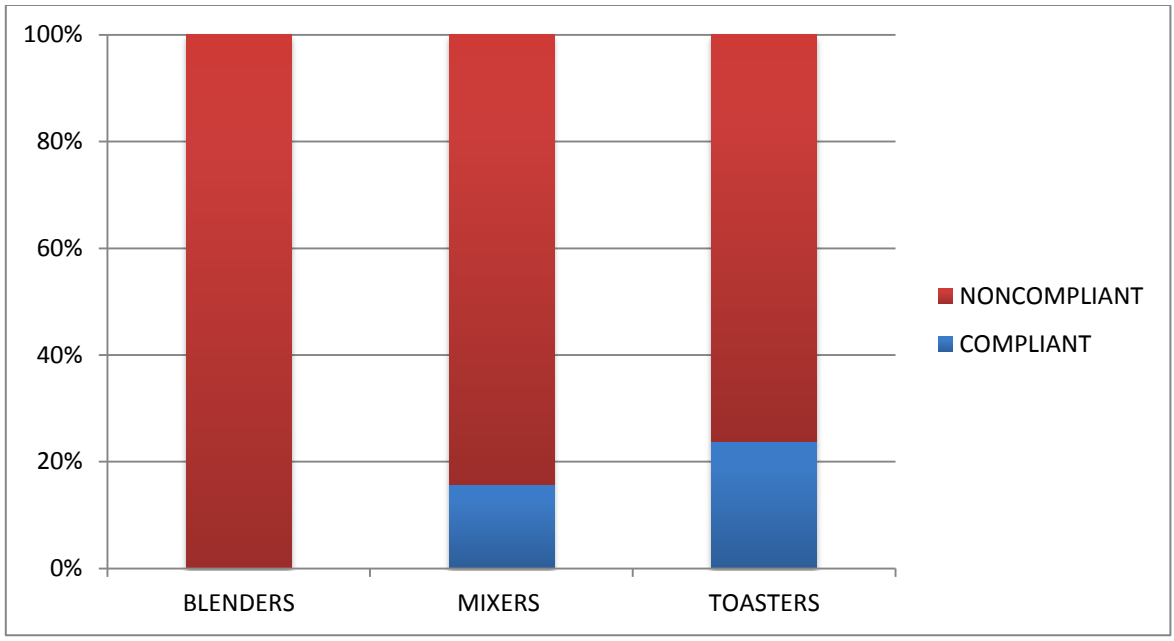


Table 11 Assessment questions for test reports of blenders, mixers and toasters

Questions for the assessment of test reports for Blenders, Mixers and Toasters
Are the applicant/manufacturer details provided in full?
Do the applicant/manufacturer details match those shown in the DoC?
Are all product model number/type details present and correct?
Do the product model number/type details match those shown in the DoC?
Is the product chosen for sampling included in the testing results?
Is the test report authorised for issue with the name, function and signature of the authorised signatory?
Does the product rating label image/technical specifications match that of the sampled product?
Are references to harmonised standards stated in full including amendments?

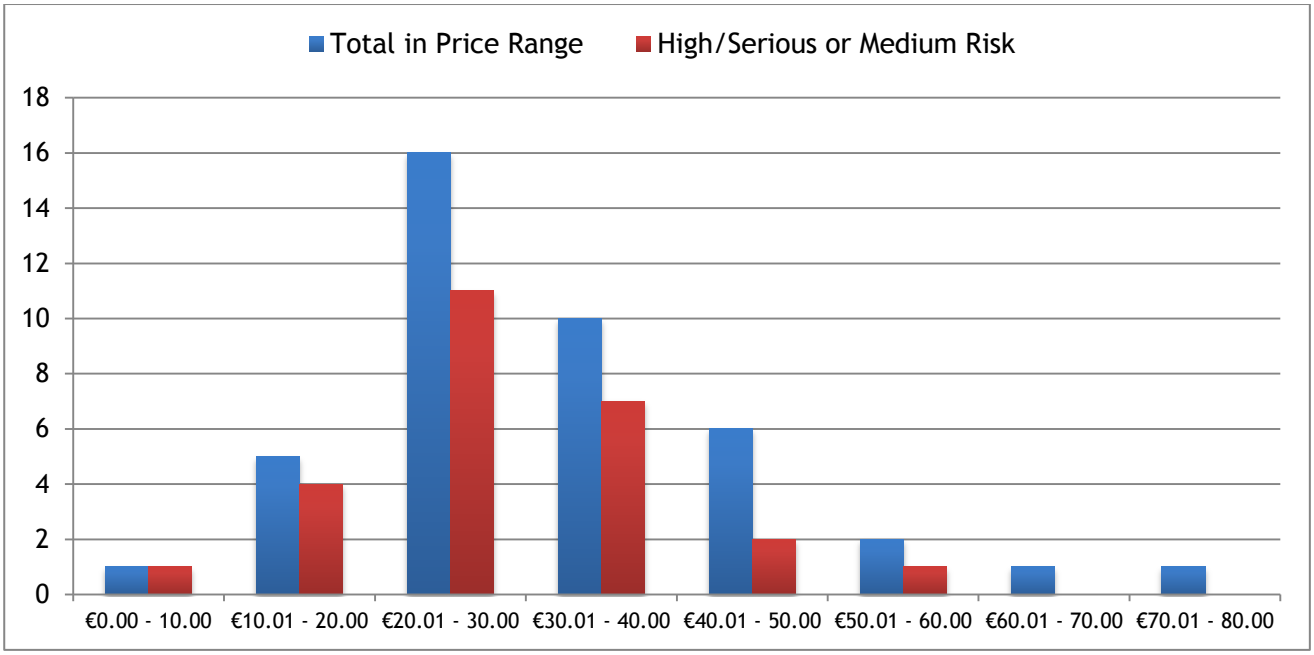
Are references to the harmonised standards correct?
Do references to harmonised standards match those shown on the DoC?
Does the report contain a list of safety-critical components?

4.4 Price versus Safety Parallel

With such a large number of non-conformities for all product types, the activity attempted to determine a interaction between price of a given product and its overall safety. This was measured in terms of the number of medium risk ratings and high or serious risk ratings. Figures 20, 21 and 22 provide the analysis. It must be noted that this is a small quantity overall, which does not give a statistically valid picture of the market. But it does suggest that targeting only lower priced samples may not necessarily be the optimum strategy for market surveillance authorities.

The 44 blenders tested covered a wide price range from under €8 to over €76, as shown in Figure 22. The majority of the medium and high/serious risk blenders cost under €40, with only one high risk sample and two medium risk samples costing more than €40. It was concerning to see that of the 32 blenders costing under €40, 15 had medium risks and 8 had high/serious risks. This equates to 72% of the blenders costing under €40.

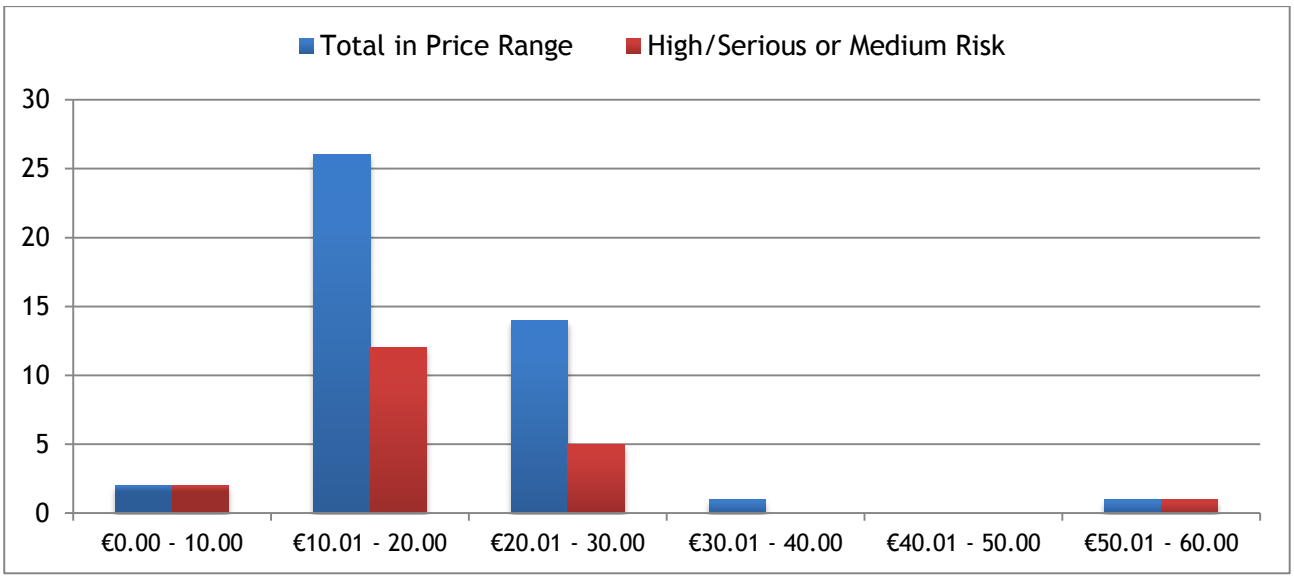
Figure 22 Price vs safety for Blenders



Price Range	€0.00 - 10.00	€10.01 - 20.00	€20.01 - 30.00	€30.01 - 40.00	€40.01 - 50.00	€50.01 - 60.00	€60.01 - 70.00	€70.01 - 80.00
Safety Rating High/Serious	0	2	3	3	1	0	0	0
Safety Rating Medium	1	2	8	4	1	1	0	0
Total Blenders Tested in Price Range	1	5	16	10	6	2	1	1
Percentage Non-compliant	100%	80%	69%	70%	33%	50%	0%	0%

The majority of the 45 mixers tested cost under €30, as shown in Figure 22. Mixers costing less than €20 were the least safe, as seven medium and six high/serious risks were identified. There were no high/serious risks samples and only one medium risk sample in mixers over €30.

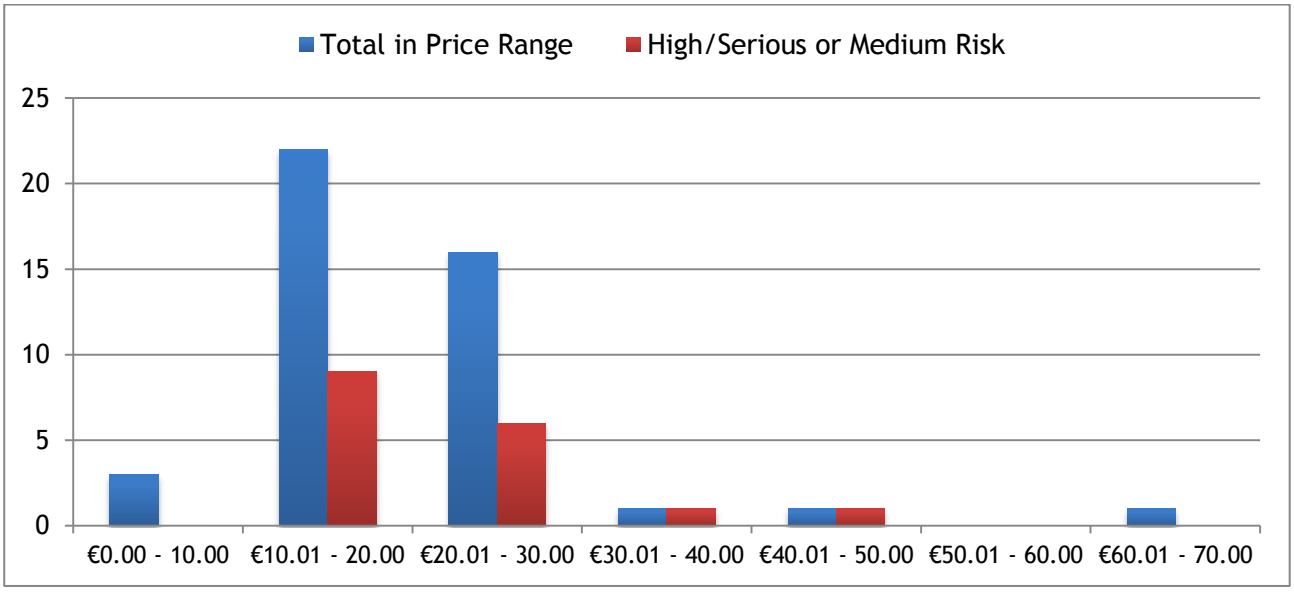
Figure 23 Price vs safety for Mixers



Price Range	€0.00 - 10.00	€10.01 - 20.00	€20.01 - 30.00	€30.01 - 40.00	€40.01 - 50.00	€50.01 - 60.00
Safety Rating High/Serious	1	5	2	0	0	0
Safety Rating Medium	1	7	3	0	0	1
Total Mixers Tested in Price Range	2	26	14	1	0	1
Percentage Non-compliant	100%	46%	36%	0%	0%	100%

Most of the 45 toasters tested cost below €30, as shown in Figure 24. The only high/serious risks were apparent for toasters costing between €10 and €30, with most non-conformities found in the €10 to €20 price range. There were also two medium risk toasters costing over €35.

Figure 24 Price vs safety for Toasters



Price Range	€0.00 - 10.00	€10.01 - 20.00	€20.01 - 30.00	€30.01 - 40.00	€40.01 - 50.00	€50.01 - 60.00	€60.01 - 70.00
Safety Rating High/Serious	0	2	3	0	0	0	0
Safety Rating Medium	0	7	3	1	1	0	0
Total Toasters Tested in Price Range	3	22	16	1	1	0	1
Percentage Non-compliant	0%	41%	38%	100%	0%	0%	0%

5 Risk Assessment & Action Taken

5.1 The Risk Assessment Method

The representatives from the participating authorities and PROSAFE met with the expert staff from the testing laboratory that tested blenders and mixers to review and evaluate the test results received. During this meeting there was also a conference call with the other testing laboratory that tested the toasters. The representatives then developed in conjunction with the risk assessment working group of JA2015 risk assessment templates for many of the scenarios presented. This was done using the European Commission's Risk Assessment Guidelines (RAG) tool[2]. These included:

- Accessible live parts
- Cut or laceration from moving parts
- Burns from hot liquids
- Burns from accessing touchable hot surfaces
- Overheating and fire hazard.

When applying the European Commission document 2015-IMP-MSG-15, the following abstracted severity levels were considered in the risk assessment process for the consideration of property damage:

(1) A few items of furniture are affected by smoke or burn marks;
(2) One room suffers extensive fire damage with further rooms affected by smoke or burn marks;
(3) More than one room suffers severe fire damage with smoke spreading to other rooms;
(4) A whole building or several rooms in a home and/or adjacent homes are destroyed by fire.

Sensitivity analysis was also applied. This is possible using the RAG tool where the adjusted probability of injury steps must be subsequently applied. Moreover, this work was later completed by the participants for each of the samples that they supplied.

5.2 The Risk Assessment Results

The participating MSAs assessed the risk posed by all the identified non-conformities using the methodology outlined above. The results can be seen in Table 12.

[2] Via the on-line risk assessment application https://ec.europa.eu/consumers/consumer-safety/rag/#/screen/home

Table 12 Risk level associated with the identified non-conformities (all 134 samples)

Risk level	Number of non-compliant samples	Percentage
Not applicable as appliance already withdrawn	0	0%
Compliant / Remedial non-compliance	32	24%
Minor non-compliance – or low risk	31	23%
Major non-compliance - or medium risk	43	32%
Serious non-compliance - or high risk	28	21%

5.3 Action and Measures taken

As a result, the participating MSAs took enforcement actions on 56 of the 134 blenders, mixers and toasters tabled above. The actions and measures are shown in Table 13.

Table 13 Overview of measures taken against non-compliant products

Actions taken	Number of samples
Compliant at point of laboratory testing	27
Still under evaluation	12
Later accepted as compliant by the MSAs (following counter expertise)	0
No action	29
Minor measures or notification to economic operator	21
Sales ban	20
Withdrawal from the market	53
Recall from consumers	3
RAPEX notifications made	24

The actions mentioned in the table above have the following meaning:

- **No action.** No action was necessary because no safety issues were identified with the product, or the risk is so low that no action is required.
- **Later accepted as compliant by the MSAs.** The product failed testing, but was later proven to be compliant by the Economic Operator.
- **Minor measures.** The economic operator takes measures against (future deliveries of) the product in line with directions from the market surveillance authority. The measures could be minor design changes, minor changes in production or quality control, minor update of marking, etc.
- **Sales ban.** The product is prohibited from sale permanently or until certain conditions are met.
- **Withdrawal.** This measure is defined in the General Product Safety Directive 2001/95/EC (GPSD). The distribution, display and the offer of a product which is dangerous to consumers is stopped.
- **Recall.** This measure is defined in the GPSD. Any means aimed at achieving a return of a product that has already been supplied or made available to consumers.
- **RAPEX.** The product has been placed on the EU's Rapid Alert System for non-food dangerous products — under Article 12 of the GPSD as the product represents a serious risk, or under Article 11 of the GPSD for products posing a risk classified as less than serious.
- **Still under evaluation.** Proportionate corrective action/follow up measures are pending the outcome of discussions between the Market Surveillance Authority and the Economic Operator.

5.4 RAPEX

As can be seen in Table 13, MSAs have made 24 RAPEX notifications as a result of this Joint Action. These were mostly serious and high-risk levels. The serious risks were associated with samples having multiple standard clause failures and dangerous consequences for the user. It was also noted that:

- Some economic operators have undertaking to resolve the identified nonconformities immediately and have voluntarily withdrawn their products from the market;
- There are on-going discussions with two Economic Operators regarding the results of testing for two high risk level samples. Two potential RAPEX alerts are therefore pending.

5.5 Conclusions of the Joint Action and associated impacts made

The overall results of the laboratory testing for this Joint Action showed that only 27 of the 134 samples examined passed all of the tests according to the various standards and clauses. This outcome was significantly worse than expected both from the perspective of stakeholders and the participating market surveillance authorities. These results, combined with the risk analysis undertaken raise the following points:

- The sampling process was highly effective, as the inspectors were able to identify potentially nonconforming products in their sampling process;
- There appears to be a relatively high number of unsafe blenders, mixers and toasters available on the EU market, which is a cause for concern;
- There is scope for further consideration of blender cutting blade access and stopping times, as some manufacturers are able to fit interlocking devices while selling at a similar price point;
- Similarly, there is a need to consider the results of this joint action alongside the existing formal objection for toasters given that 15% of the samples tested exceeded the burn threshold specified in CENELEC Guide 29 for bare uncoated metal surfaces;
- While 88% of Declarations of Conformity documents requested were received, approximately half were not drawn up in accordance with the EU Low Voltage Directive;
- None of the test reports received for blenders was compliant with the criteria, as assessed; and only approximately 20% of test reports for blenders and toasters were compliant. This suggests that economic operators are lacking technical knowledge or are not verifying test reports upon receipt and a broader technical documentation review project might be useful for future joint actions.

As a consequence, the participants have undertaken the following actions:

- 24 RAPEX notifications made;
- 3 samples recalled;
- 53 samples withdrawn from the market;
- 20 samples subject to sales bans;
- Regular, if indirect, liaison maintained with the LVD WP and LVD ADCO.

The results of the Joint Action have also been shared with ANEC (European Consumer Voice in Standardisation), CECED, UK's Electrical Safety First, CLC/TC 61 chairman, and the LVD ADCO. Furthermore:

- Checklists have been developed for Market Surveillance Inspectors and to assist Customs Authorities.
- The Joint Action results were presented to the LVD ADCO meeting in April 2018.
- The Activity Coordinator has been invited by the UK's Electrical Safety First (registered charity) to present the findings of the Joint Action to its product safety committee and possibly at its annual electrical safety conference.

- An invitation has been received from the LVD WP to present the findings of the activity at the next meeting, scheduled for 25 June 2018.
- Many products have been updated within ICSMS.

6 Liaisons

The participating authorities wanted to involve as many stakeholders as possible. Open sessions for external stakeholders were organised during the first meeting to discuss the aims and objectives of the activity and any known issues with blenders, mixers and toasters. Some of those stakeholders were also present during the final meeting to share the findings from this joint action.

The following stakeholders actively participated in these meetings:

- **ANEC, the European Consumer Voice in Standardisation:** Their membership is open to representatives of national consumer organisations from 33 countries (EU, EFTA and accession countries).
- **CENELEC/TC 61 – Technical Committee dealing with Household Electrical Appliances.**
- **CECED – European Committee of Domestic Equipment Manufacturers:** CECED represents the household appliance industry in Europe.
- **UK's Electrical Safety First:** A UK registered charity specialising in electrical product safety.

6.1 Involvement of Customs

The liaison between Customs Authorities and the Activity was well intentioned. MSAs in some cases have a good working relationship with Customs Authorities. One MSA in particular has a list identifying potentially problematic importers and this list is constantly evolving as a result of the close working relationship. Customs Authorities also provided 2% of the blender samples and 2% of the mixer samples for testing.

The activity has also decided to share the product and documentation review checklists with Customs Authorities to assist with future targeting and intelligence led sampling.

7 Evaluation, Lessons Learned

Looking back over the project, it can be concluded that the objectives were met. There was some scepticism from the outset that these established products would pose any risks to consumers. It was therefore most surprising to see failure rates of 95% for blenders, 87% for mixers and 58% for toasters. The overall percentage of non-conforming products examined was high at 80%.

Lack of safety information and warnings in user instructions accounted for the largest percentage of standard clause failures, yet this is a relatively simple clause. Samples demonstrating non-conformity with multiple standard clauses reached 79% for blenders, 66% for mixers and 20% for toasters. This is concerning, as many of the non-conformities were across several safety-critical clauses such as protection against access to live parts, heating, abnormal operation, screws and connections and resistance to heat and fire.

Regarding the project as a whole, the group concluded the following evaluations and lessons learned:

- The sampling process was successful in avoiding any sample duplication, but there is perhaps scope for using an online tool giving live updates rather than relying on each MSA providing a table via email;
- The joint action made use of virtual meetings lasting up to one hour. These had a well-focussed agenda and they proved useful in complementing the physical meetings. Only one MSA experienced connections problems for the first virtual meeting, which was easily resolved in time for the next meeting;
- The suggestions at the outset of the project for pre-marketing risk assessment standards such as EN 61010-1, ISO 12100, IEC Guide 116 and CENELEC Guide 32 were welcomed by the MSAs, and these will no doubt prove useful for future joint actions involving electrical goods particularly where the evaluation of technical documentation is required;

- The documentation review project for blenders and mixers conducted by Bulgaria in 2015 identified non-compliant user instructions and suggested the need for a wider product testing project. This joint action reinforced the need for product testing, as 60% of the samples from Bulgaria were non-compliant resulting in two RAPEX notifications. There was agreement that while documentary checks are useful and can supplement a joint action, the real value for market surveillance purposes is the outcome of product testing;
- The checklists developed by the joint action for the assessment of products, the declaration of conformity and test reports provide an excellent basis for future joint actions; but there is scope for consolidating or removing some of the criteria to ensure greater efficiency in the reporting of results;
- One MSA in particular highlighted the difficulties of obtaining technical documentation from economic operators. Occasionally, the second or third version of a particular document would be correct;
- The large number of non-compliant products resulted in the complex task for the testing laboratories in compiling the results, and for the activity to evaluate those results. This process can be improved for future joint actions involving household electrical appliances by preparing a common test report template to maximise the efficiency of this process;
- MSAs have increased their knowledge in the application in risk assessment of European Commission document 2015-IMP-MSG-15, as the document builds on the RAPEX Guidelines and assists market surveillance authorities when they assess the compliance of products that are subject to Union harmonisation legislation such as the EU Low Voltage Directive 2014/35/EU. It requires the use of abstract levels of severity of harm when evaluating damage to property, which was necessary in this joint action;
- The European Commission RAG tool could be improved by having a dedicated area to cover sensitivity analysis, at present the risk assessment has to be repeated after adjusting the probability of injury figures;
- The project group has provided further evidence for debate within CENELEC/TC 61 and stakeholders such as ANEC, as the accessible metal surfaces of several toasters exceeded the burn threshold in CENELEC Guide 29;
- The non-standard testing for blenders revealed the absence of an interlocking device in 75% of the samples thereby allowing the cutting blade to rotate when the lid is removed, and the mains switch is in the on position. Cutting blade stopping times also exceeded the applied 1.5 s in 36% of the samples. Again, this has provided further evidence for debate within CENELEC/TC 61, which is timely given the differences between EN 60335-2-14:2006 prAD:2017 and EN 60335-2-14:2017;
- Good documentary conformity is not necessarily a reflection of a compliant product; the project has revealed that a good declaration of conformity does not always equal a safe and compliant product. Economic operators clearly need to pay much closer attention to the verification of test reports used as a basis for demonstrating conformity assessment and regulatory compliance;
- Many of the participants involved in this joint action are members of the LVD ADCO and LVD Working Party. This was hugely beneficial and triggered a dialogue at various stages of the project. The Activity Coordinator presented the project to the LVD Working Party and this invitation was very much appreciated by the participants. The final results will also be presented at the forthcoming LVD WP meeting in June 2018;
- Input from stakeholders is essential, as their technical expertise and experience helped to deliver a successful project;
- Overall, only 27 of the 134 products examined were fully compliant. This shows that the sampling process was very effective with the MSAs using their extensive knowledge and experience in identifying potentially non-compliant products;
- The project clearly demonstrates that household electrical appliances are an important category for future joint actions.

8 Appendix I Full Details of Test Programmes

Full test programme details for blenders and mixers:

BLENDERS & MIXERS according to edition of EN 60335-2-14, including amendments, that was in place just before the Formal Objection

Clause	Test requirements and comments
7	Marking and instructions
8	Protection against access to live parts
10	Power input and current
11	Heating: Conditions specified in clause 11.7
13.1	Leakage current and electric strength at operating temperature
15	Moisture resistance
16.2	Leakage current
16.3	Electric strength
19	Abnormal operation
20	Stability and mechanical hazards
20	Stability and mechanical hazards (non-standard test): Determine the stopping time of blenders after the lid has been removed. The product under test must be operated without load at the highest speed.
21	Mechanical strength
22	Construction
23	Internal wiring: In particular clauses 23.1, 23.8 and 23.9
24	Components: NB: Temperature rise and electric strength testing should be carried out for the fitted plug according to the relevant plug standard called up in IEC 60083
25	Supply connection and external flexible cords: Excluding flexing test of clause 25.14
27	Provision for earthing
29	Clearances, creepage distances and solid insulation: Inspection with measurement in cases of doubt
30	Resistance to heat and fire: Subject external parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary or reinforced insulation to the appropriate testing such as glow wire, needle flame etc.

Full test programme details for toasters:

TOASTERS according to the edition of EN 60335-2-9, including amendments, that was in place just before the Formal Objection

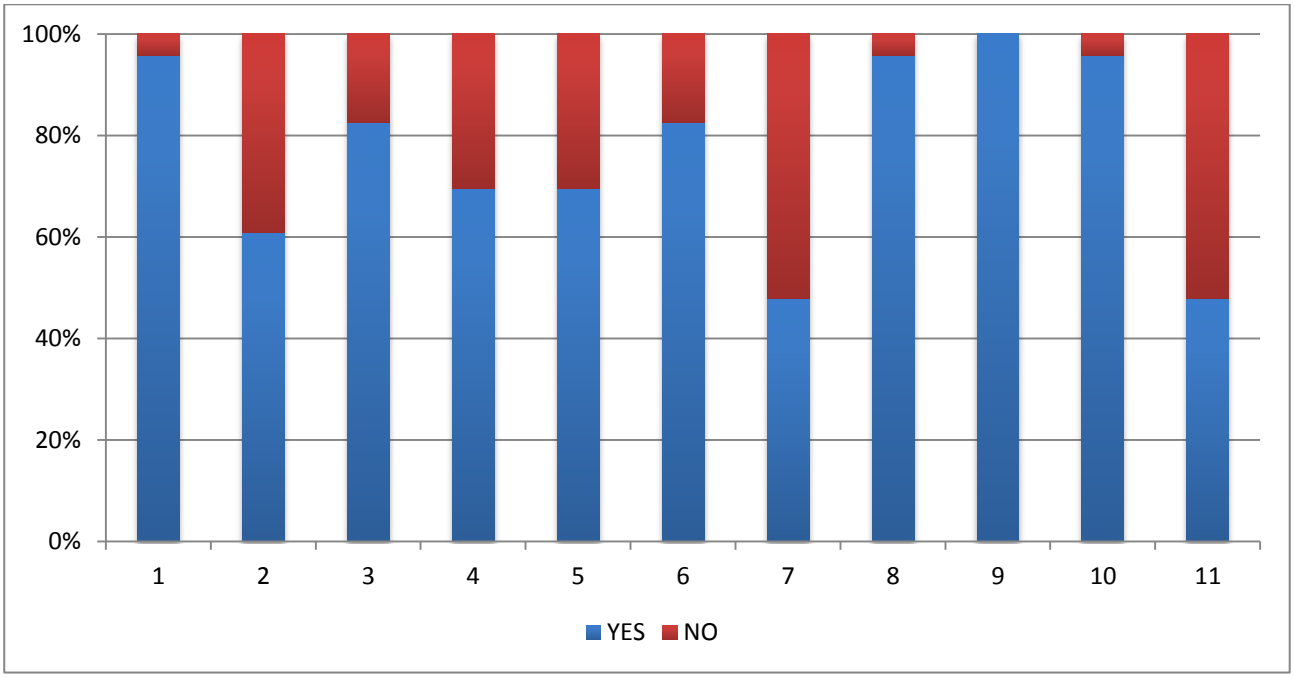
Clause	Testing requirements and comments
7	Marking and instructions
8	Protection against access to live parts
11	Heating: Operate for three cycles under normal operation at rated power. In particular clauses 11.7, 11.101, and 11.Z104 (with reference to Table Z101)
13.1	Leakage current and electric strength at operating temperature
16.2	Leakage current
16.3	Electric strength
19.101	Abnormal operation
19.102	Abnormal operation
20.1	Stability and mechanical hazards
21	Mechanical strength
22.24	Construction: Rupturing of heating elements
22.25	Construction: Sagging heating conductors and contact with accessible metal parts
22.105	Construction: Openings and live parts
23	Internal wiring: In particular clauses 23.1, 23.8 and 23.9
24	Components: NB: Temperature rise and electric strength testing should be carried out for the fitted plug according to the relevant plug standard called up in IEC 60083
25	Supply connection and external flexible cords: Excluding flexing test of clause 25.14
27	Provision for earthing
28	Screws and connections: In particular clauses 28.1 and 28.3
29	Clearances, creepage distances and solid insulation: Inspection with measurement in cases of doubt
30	Resistance to heat and fire – Subject external parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary or reinforced insulation to the appropriate testing such as glow wire, needle flame etc.

9 Appendix II Test Report Evaluation Results

9.1 Blenders

The table below shows the 11 questions that formed the evaluation of the tests reports received for those blender samples that failed the test programme. The chart below the table corresponds with the questions and provides an overview of the responses in percentage terms.

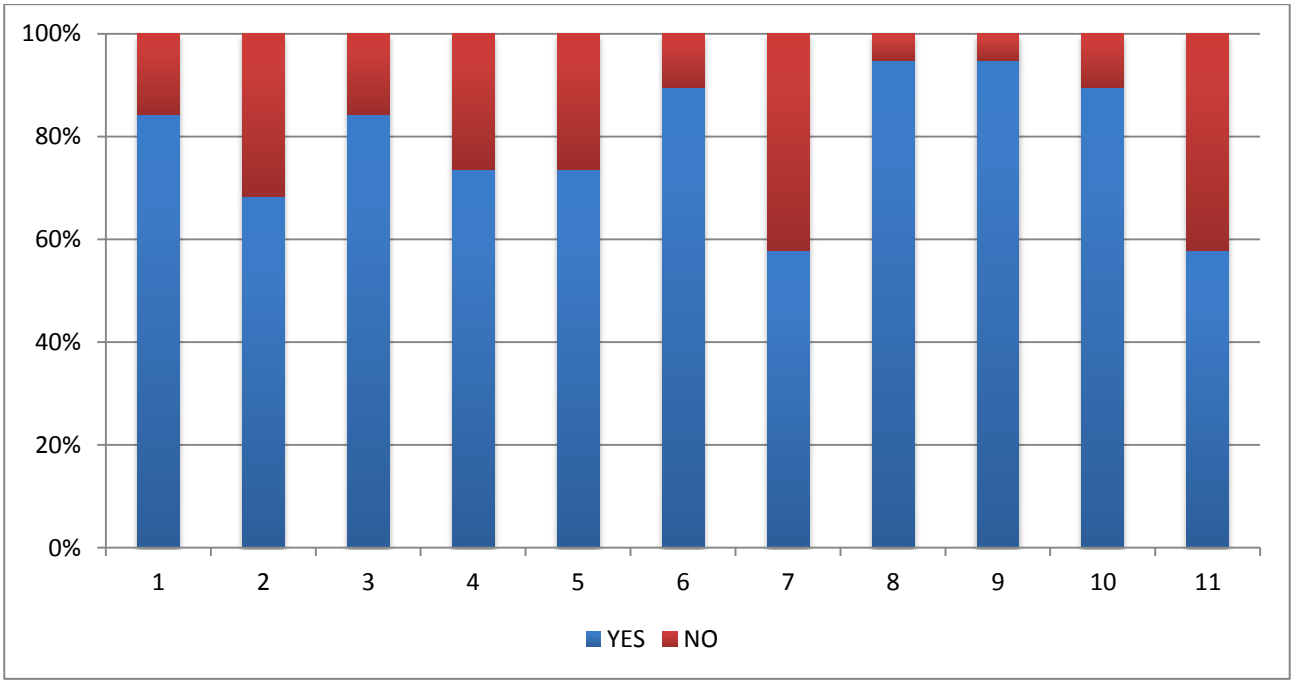
Questions for Test Report Evaluation - Blenders											
	1	2	3	4	5	6	7	8	9	10	11
	Are the applicant/ manufacturer details provided in full?	Do the applicant/ manufacturer details match those shown in the declaration of conformity?	Are all product model number/type details present and correct?	Do the product model number/type details match those shown in the declaration of conformity?	Is the product chosen for sampling included in the testing results?	Is the report authorised for issue with the name, function and signature of the authorised signatory?	Does the product rating label image/ technical specifications match that of the sampled product?	Are references to harmonised standards stated in full including amendments?	Are references to the harmonised standards correct?	Do references to harmonised standards match those shown on the declaration of conformity?	Does the report contain a list of safety-critical components?
YES	22	14	19	16	16	19	11	22	23	22	11
NO	1	9	4	7	7	4	12	1	0	1	12



9.2 Mixers

The table below shows the 11 questions that formed the evaluation of the tests reports received for those mixer samples that failed the test programme. The chart below the table corresponds with the questions and provides an overview of the responses in percentage terms.

Questions for Test Report Evaluation - Mixers											
	1	2	3	4	5	6	7	8	9	10	11
	Are the applicant/ manufacturer details provided in full?	Do the applicant/ manufacturer details match those shown in the declaration of conformity?	Are all product model number/type details present and correct?	Do the product model number/type details match those shown in the declaration of conformity?	Is the product chosen for sampling included in the testing results?	Is the report authorised for issue with the name, function and signature of the authorised signatory?	Does the product rating label image/ technical specifications match that of the sampled product?	Are references to harmonised standards stated in full including amendments?	Are references to the harmonised standards correct?	Do references to harmonised standards match those shown on the declaration of conformity?	Does the report contain a list of safety-critical components?
YES	16	13	16	14	14	17	11	18	18	17	11
NO	3	6	3	5	5	2	8	1	1	2	8



9.3 Toasters

The table below shows the 11 questions that formed the evaluation of the tests reports received for those toaster samples that failed the test programme. The chart below the table corresponds with the questions and provides an overview of the responses in percentage terms.

Questions for Test Report Evaluation - Toasters											
	1	2	3	4	5	6	7	8	9	10	11
	Are the applicant/ manufacturer details provided in full?	Do the applicant/ manufacturer details match those shown in the declaration of conformity?	Are all product model number/type details present and correct?	Do the product model number/type details match those shown in the declaration of conformity?	Is the product chosen for sampling included in the testing results?	Is the report authorised for issue with the name, function and signature of the authorised signatory?	Does the product rating label image/ technical specifications match that of the sampled product?	Are references to harmonised standards stated in full including amendments?	Are references to the harmonised standards correct?	Do references to harmonised standards match those shown on the declaration of conformity?	Does the report contain a list of safety-critical components?
YES	20	18	18	18	18	19	14	21	21	21	14
NO	1	3	3	3	3	2	7	0	0	0	7