

Joint Market Surveillance Action on Harmonised Products **JAHARP2021-03**

On non-original aftermarket replacement brake pads

Layman's report



Co-funded by
the European Union

Author: PROSAFE

www.prosafe.org

Avenue des Arts/Kunstlaan 41

1040 Brussels, Belgium

Contacts: Ioana Sandu, PROSAFE Executive Director

info@prosafe.org / +32 2 757 9336



@PROSAFE_ORG



PROSAFE

Disclaimer

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Innovation Council and SMEs Executive Agency (EISMEA). Neither the European Union nor the granting authority can be held responsible for them.

Table of contents

Glossary	4
Executive summary	6
Scope and objectives of JAHARP2021-03	6
Geographical scope	6
Highlights and key results.....	7
Tips for consumers and EOs.....	8
Introduction	9
Methodology	9
Inspection and test results	10
Documentation Checks	10
Technical Service Tests	11
Risk Assessment and Follow up measures	12
Conclusions	13

List of abbreviations

ADCO	Administrative Cooperation Group
CE	European Conformity (Conformité Européenne)
DG GROW	Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs
EEA	European Economic Area
EISMEA	European Innovation Council and SMEs Executive Agency
EU	European Union
GA	Grant Agreement
ICSMS	Information and Communication System for Market Surveillance
MS	Member State
MSA	Market Surveillance Authority
OJ	Official Journal of the European Union
RAG	European Commission's Risk Assessment Guidelines tool
TAA	Type Approval Authority
UNECE	Economic Commission for Europe of the United Nations

Glossary

AFTERMARKET: The market for the supply of products or services needed for, or in connection with, the use of what is often a relatively long-lasting piece of equipment that has already been acquired. This equipment is referred to as the 'primary product' (and hence its market is called 'primary market'). The complementary product(s) (typically spare parts or consumables) and services used in connection with the primary product are referred to as 'secondary products' (and their market is called 'secondary market' or 'aftermarket').

APPROVAL AUTHORITY: The authority of a Contracting Party with competence for all aspects of the approval of wheeled vehicles, equipment, and parts, for issuing and, if appropriate, withdrawing approval certificates, for acting as the contact point for the Approval Authorities of other Contracting Parties, for designating the Technical Services and for ensuring that the manufacturer meets the obligations regarding the conformity of production.

CE MARKING: CE stands for "Conformité Européenne", the French term for "European Conformity". The CE mark means that the manufacturer takes responsibility and declares that a product sold in the European Economic Area (EEA) has been assessed to meet all

applicable safety, health, performance, and environmental requirements.

ECONOMIC OPERATOR: the manufacturer, authorised representative, importer, distributor, fulfilment service provider, or any other natural or legal person who is subject to obligations in relation to the manufacture of products, making them available on the market or putting them into service in accordance with the relevant Union legislation.

CONFORMITY ASSESSMENT: A manufacturer can only place a product on the EU market when it meets all the applicable requirements. The conformity assessment procedure is carried out before the product can be sold.

CORRECTIVE ACTIONS: any action taken by an economic operator to bring any non-compliance to an end where required by a market surveillance authority or on the economic operator's own initiative.

HARMONISED STANDARD: a European standard developed by a recognised European Standardisation Organisation defining the technical specifications used to assess/verify that a product complies with the mandatory requirements.

ICSMS DATABASE: The Information and Communication System on Market Surveillance (ICSMS - webgate.ec.europa.eu/icsms/) is an IT

platform set up and managed by the European Commission which enables the exchange of information between EU-27 market surveillance authorities on non-food product inspections and their results. ICSMS has an internal and a public area. Consumers can access ICSMS' public area to check whether a product model has been inspected and if it is compliant.

INSPECTION: any market surveillance activity aimed at verifying the compliance of products against the requirements and conditions as defined in the legislation and standards.

MARKET SURVEILLANCE: the activities carried out and measures taken by market surveillance authorities to ensure that products comply with the requirements set out in Union legislation.

MARKET SURVEILLANCE AUTHORITY: an authority designated by an EU Member State as responsible for carrying out market surveillance in the territory of that Member State.

MODEL: a version of a product of which all units share the same technical characteristics relevant for the label and the product information sheet and the same model identifier.

NON-COMPLIANCE: any failure to comply with any requirement under the Union legislation.

PRODUCT: a type or sub-type of a product within a product group/class. For example, electric or gas-fuelled local space heaters are sub-types of the local space heaters family product group.

PRODUCT DOCUMENTATION: any type of (mandatory and/or non-mandatory) documentation made available in any form by the manufacturer/supplier of a product model and accompanying that model.

PRODUCT INFORMATION SHEET: a standard document containing information relating to a product, in printed or electronic form.

RISK-BASED APPROACH/SAMPLING: the most common approach among market surveillance authorities, used to focus/optimize their limited resources on those products and models considered most likely to pose a risk of non-compliance.

SAFETY GATE: The EU rapid alert system for dangerous non-food products. The Safety Gate system enables that information on measures taken against non-food dangerous products is circulated quickly among the national authorities responsible for product safety in the Single Market countries.

SALE BAN: A corrective action preventing the product from being available on the market or setting prior conditions for making the product concerned available on the market.

SAMPLES: Different units of the same model. For example, in order to verify the compliance of a model, market surveillance authorities can test three (3) samples/units belonging to that model in a laboratory (what is known as "triple-testing").

TECHNICAL DOCUMENTATION: mandatory documentation compiled by the manufacturer that enables market surveillance authorities to assess the conformity of a product with the applicable requirements. A technical documentation file contains specific product information including, for example, a description of the product and its intended use, the results of relevant environmental assessment studies carried out by the manufacturer, information and elements of the product design specification relating to environmental design aspects of the product, the results of measurements on the requirements carried out.

TECHNICAL SERVICE: An organization or body designated by the Approval Authority of a Contracting Party as a testing laboratory to carry out tests, or as a conformity assessment body to carry out the initial assessment and other tests or inspections on behalf of the Approval Authority, it being possible for the Approval Authority itself to carry out those functions.

VOLUNTARY MEASURE: A corrective action where not required by a market surveillance authority.

Executive summary

Scope and objectives of JAHARP2021-03

The [JAHARP2021-03](#) project on non-original brake components was a pan-European Joint Action coordinated by [PROSAFE](#) which started in April 2022 and ended in July 2024. It focused on non-original brake components, and it fell within the scope of the General Safety Regulation (EC) 661/2009¹, based on which replacement equipment already placed on the market (such as non-original brake pads) shall fulfil the provisions of either the Directive 71/320/EEC² or the UNECE Regulation No. 90³.

The Market Surveillance Authorities (MSAs) sampled a total of 51 aftermarket replacement brake pad sets from physical shops or from online sellers and sent them to a technical service selected for the activity for testing against UNECE Regulation No 90, Annex 3. In addition, product markings, instructions and technical documentation were checked by the participating authorities.

Overall, **nonconformities were identified for 55% of the products tested and 88% of the products subject to documentation checks.**

The largest number of the nonconformities revealed through testing concerned **cold performance and speed sensitivity**. The participating MSAs evaluated the risks associated with the identified testing nonconformities using the European Commission's Risk Assessment Guidelines (RAG) tool. The risks were deemed low-medium for cold performance and high/serious for speed sensitivity.

After conducting a risk assessment, the MSAs carried out enforcement actions, which included advisory notices sent to the Economic Operators (EOs) and sales bans.

Geographical scope

4 Market Surveillance Authorities (MSAs) from the following 4 Countries have participated in this Joint Action coordinated by PROSAFE: Latvia, Luxembourg, The Netherlands, and Romania.

Participating EU Market Surveillance Authorities in JAHARP2021-03

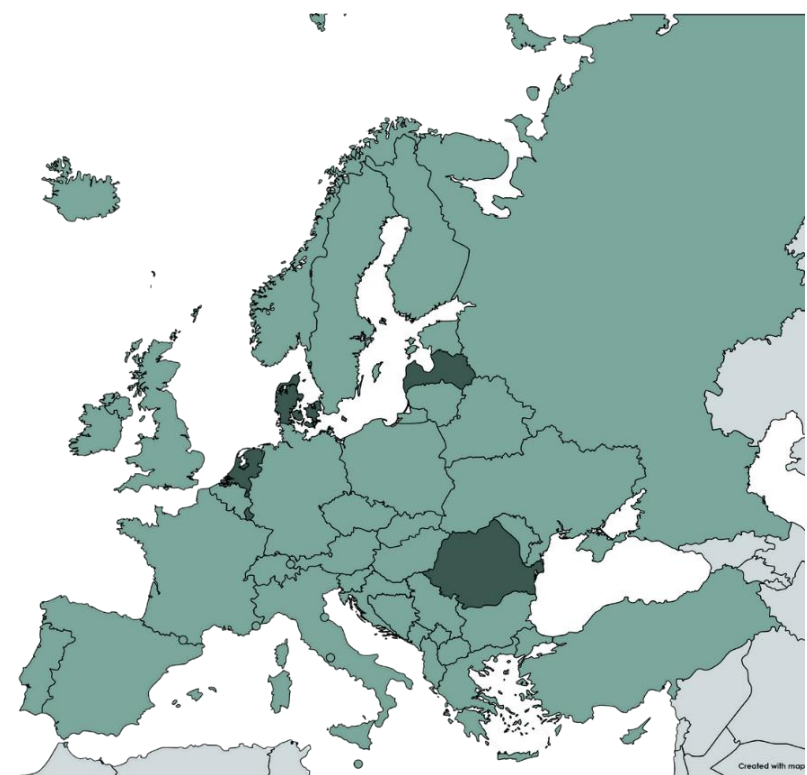


ILNAS



Human Environment and Transport Inspectorate
Ministry of Infrastructure and Water Management

Coordinated by



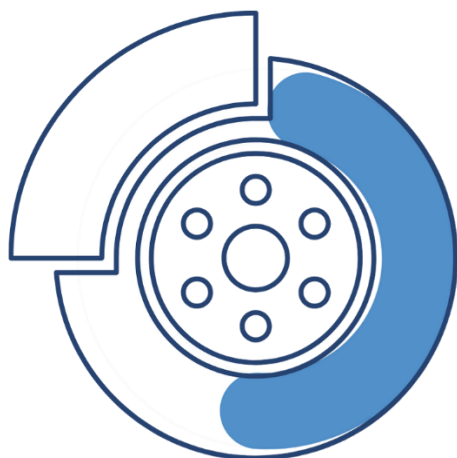
¹ [Regulation \(EC\) No 661/2009](#) of the European Parliament and of the Council of 13 July 2009 concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor

² [Council Directive 71/320/EEC](#) of 26 July 1971 on the approximation of the laws of the Member States relating to the braking devices of certain categories of motor vehicles and of their trailers

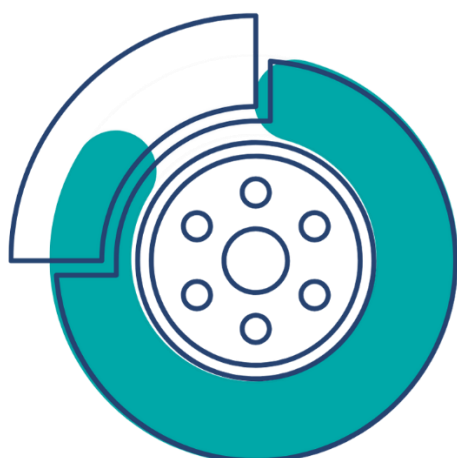
³ [Regulation No 90 of the Economic Commission for Europe of the United Nations \(UN/ECE\)](#) – Uniform provisions concerning the approval of replacement brake lining assemblies and drum brake linings for power-driven vehicles and their trailers

Highlights and key results

Overall **non-conformities detected** in inspections and tests



55%
of **tested** non-original
aftermarket
brake pads tested
were non-compliant



88%
of inspected **markings and
packaging** of non-original
aftermarket
brake pads were non-
compliant

9 **warnings/advisory notices** issued to EOs

10 **sales bans**

Figure 1 Key highlights of JAHARP2021-03

CAUTION!

These results are based on samples of products collected from the markets in the participating countries by experienced market surveillance inspectors. As in most market surveillance activities, the results represent **the targeted efforts that authorities undertook to identify non-compliant products**. Because of that, **the results of this joint action do not present a statistically valid picture of the situation of the entire market**. The samples were tested by an accredited technical service and the testing focused on vehicle-based testing under UNECE Regulation No 90, Annex 3.

Tips for consumers and EOs

Tips for Car Repair Shops & Consumers



Tips for Economic Operators

Figure 2 Tips for consumers and EOs

Introduction to JAHARP2021-03

The JAHARP2021-03 Joint Action targeted **for the first time** non-original aftermarket brake lining assemblies (in particular, brake pads) for motor vehicles of category M1 (≤ 3.5 tonnes), which are *vehicles used for the carriage of passengers and comprising not more than eight seats in addition to the driver's seat*.

Brakes and their components need to be type approved by a Type Approval Authority (TAA) before being allowed to enter into the market. A *non-original or replacement brake lining assembly* is a brake lining assembly of a type approved under the Regulation as a suitable service replacement for an original one, where an *original brake lining assembly* is one conforming to the data attached to a vehicle type approval documentation.

The brake pads for motor vehicles are **the most sold non-original braking replacement parts**. There is a big variety of vehicles on the market and the aftermarket provides a great diversity of spare parts. Often, a single manufacturer cannot produce the whole portfolio of products and therefore typically outsources the fabrication process. When outsourcing, the manufacturer may sign a contract with another manufacturer which has the necessary approval or could work with a third party. Because of this, it is **difficult to trace the manufacturer**, defined by the UNECE Regulation No 90 as “*the organisation which can assume technical responsibility for the brake lining assemblies [...] and can demonstrate that it possesses the necessary means to achieve conformity of production*”.

PROSAFE and the MSAs involved deemed important to verify compliance of these products, given the relevance of the risks associated with malfunctioning brakes, in order to ensure that non-original aftermarket replacement brake pads available on the EU market were safe and carried the appropriate markings and certificates.

Methodology



Figure 3 Project Timeline

As a first step, the participating MSAs shared information on their market surveillance activities concerning aftermarket non-original brake pads and investigated the market in the EU for these products. They identified the possible sampling criteria to apply for the selection of products to be inspected.

They then agreed on a Common Code of Practice, establishing criteria for the selection of products to be subjected to documentation checks and prepared a checklist for conformity checks which was used during the assessment.

The MSAs then identified products for technical assessment and launched a tender procedure for the selection of technical services.

Tests were conducted according to the relevant UNECE Regulation by the selected technical service.

An analysis of the results and an assessment of the risks was then conducted, to which enforcement actions followed. MSAs informed Economic Operators (EOs) of the results and appropriate measures were taken when applicable.

After the tests, most of the products are being disposed of by the laboratory in accordance with EU rules. Some of the products will be used by the MSAs for internal training.

Inspection and test results

Based on the market and risk analysis conducted during the first phases of the project, the MSAs identified 51 non-original brake pads for documentation checks and technical tests, sampled via physical shops and online sellers.

They selected a total of seven different vehicle makes and models, which represented those vehicles typically available in the markets of the participating authorities.

The pictures below portray examples of sampled products.



Figure 4 examples of products sampled

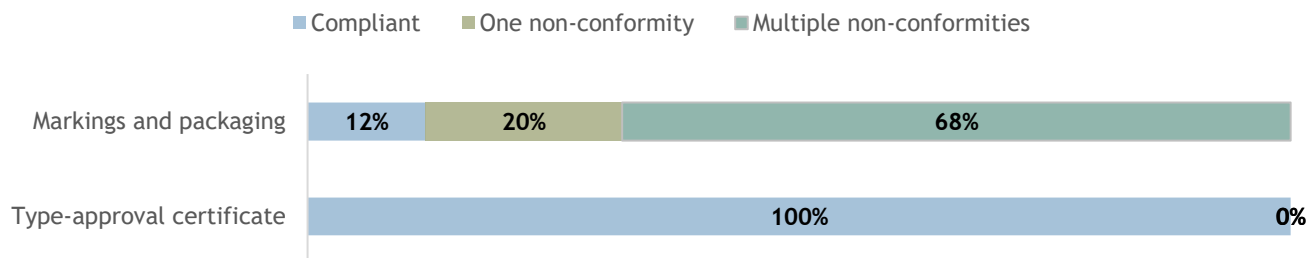
Documentation Checks

The obligations of economic operators set out in UNECE Regulation No 90 refer to the approval certificate, and the product packaging information and product marking criteria. The MSAs verified both the approval certificate and the product packaging and marking requirements and developed a checklist for conformity checks.

Concerning type-approval certificates, **all the ones examined were satisfactory and were evaluated as compliant (100% compliance rate).**

Concerning product packaging and markings, **nonconformities were recorded for 88% of the products concerned, with 20% of them presenting one non-conformity and 68% having multiple non-conformities.**

The graph below shows the result of the documentation checks.



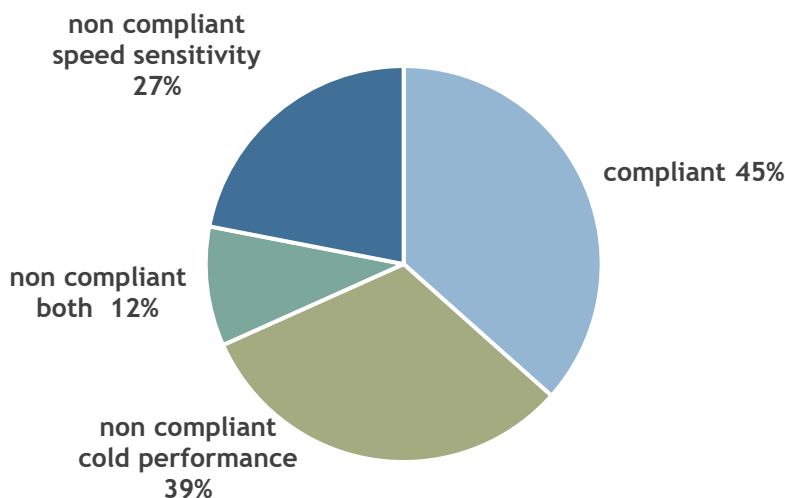
The main administrative nonconformities identified were:

- ✚ *Manufacturer’s details on packaging not matching those in the approval certificate.*
- ✚ *Product make and model type on packaging not matching those in approval certificate.*
- ✚ *Packaging not displaying vehicles/axles/brakes for which contents are approved.*
- ✚ *Fitting instructions not in official language of country where the product is sold.*
- ✚ *Products not marked with make/type and model details not matching those in approval certificate*

Technical Service Tests



All 51 brake pad sets were subjected to the same testing programme, verifying the main requirements specified in UNECE Regulation No. 90, Annex 3.

The graph below gives an overview of the nonconformities found for the 51 non-original equipment aftermarket replacement brake pad sets, as tested, including the percentage of products having multiple non-conformities.



The nonconformities recorded concerned the **cold performance equivalence test (20 products)** and the **speed sensitivity test (14 products)**. The total number of brake pad sets that failed both cold performance and speed sensitivity testing was 6.

The table below explains the two tests and the risk associated with their failure.

	<i>Cold Performance</i>	<i>Speed Sensitivity</i>
<i>Regulation</i>	<i>The replacement brake lining assembly shall be considered to show similar performance characteristics to the original brake lining assembly if the achieved mean fully developed decelerations at the same control force or line pressure in the upper two thirds of the generated curve are within 15 per cent of those obtained with the original brake lining assembly.</i>	<i>Mean fully developed decelerations recorded for the higher speeds shall lie within 15 per cent of that recorded for the lowest speed.</i>
<i>Associated Risk level</i>	 Low/Medium The braking system of the vehicle at low temperature, which represents the initial period of driving, requires a greater brake pedal force by the driver. This brake feedback is similar to that experienced when bedding in newly replaced brake pads but of a greater magnitude arising from the nonconformity.	 High The braking system would not reduce speed effectively, which poses a higher risk in cases of dynamic driving conditions, as the manoeuvrability of the vehicle is affected, and the driver may not safely avoid obstacles or bystanders.

Risk Assessment and Follow up measures

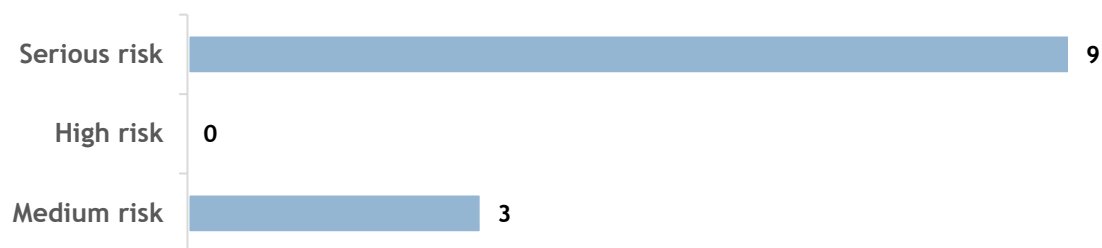
The MSAs agreed upon a common approach to the application of the **EU Safety Gate risk assessment guidelines** for each product to ensure that the resulting assessments were harmonised to the greatest extent possible.

Initial risk assessment scenarios were discussed during the risk and market analysis phase with the aim of assisting the post-testing risk assessment phase. The final product testing results and associated risks were also discussed with the contracted technical service at its premises in a hybrid meeting.

Concerning documentation checks, the participating market surveillance authorities deemed these administrative nonconformities a low risk, with the exception of two products that were deemed a medium risk. Nonconformities of this type typically constitute minor measures such as a remark or warning to the economic operator. The cumulative effect of products having multiple administrative nonconformities potentially raises the risk level, as the user/installer may not have sufficient information at the time of brake pad installation.

Concerning testing, as mentioned in the previous section, the project group concluded a low/medium risk for cold performance and a high/serious risk for speed sensitivity.

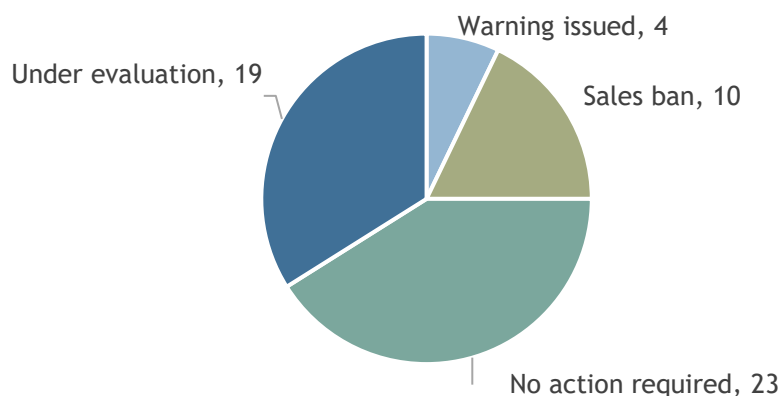
Nine products were evaluated as a serious risk. The graph below shows the number of products evaluated as presenting a medium, high or serious risk.



Overall, the project has highlighted **a large number of noncompliant aftermarket replacement brake pads** for category M1 vehicles, and while corrective measures are ongoing at the time of this report, the following actions have already been recorded:

- ✚ 9 warning/advisory notices issued to economic operators.
- ✚ 10 of the products subject to a sales ban for the duration of the investigation.

The graph below shows the enforcement measures taken by the participating MSAs.



Conclusions and lessons learnt

This Joint Action was **the first one targeting non-original aftermarket brake pads for category M1 vehicles**. The 4 MSAs participating in this Joint Action brought home several lessons learnt and they are now sharing them with the relevant ADCO group and with the EUPCN.

The project focused on vehicle-based testing, but **the choice of vehicles was limited given the need to compare the aftermarket replacement brake pads against the original brake lining assemblies**, as required by the Regulation. This restricted the available vehicles to new or those having minimal mileage.

In addition, the evaluation activities have revealed that the original components of the vehicle braking system are **marketed in the aftermarket under different codes to those stated in the vehicle approval**. For approval documentation covering aftermarket brake pads there is **no means of traceability to the original fitted equipment**. The range of intended use cannot therefore be established and it is practically impossible to verify the claimed interchangeability for vehicle makes and models.

Furthermore, targeting aftermarket replacement brake pads for the first time has revealed **the importance of technical documentation**. The complexity of the legislative framework for aftermarket replacement brake pads could be managed by the use of **field inspector checklists supported by instructions** derived from the outcome of such joint market surveillance projects.

Overall, the activity demonstrated that **aftermarket replacement brake pads are an important category and should be considered for future joint actions**. The initial intelligence from the ADCO Automotive group contributed greatly to the success of the Joint Action.

PROSAFE is coordinating a number of other projects and Joint Actions with the aim of contributing to the implementation of Regulation (EU) 2019/1020, together with other regulations concerning products' safety and energy efficiency. We will continue working with market surveillance authorities, consumer and business associations to ensure that products comply with EU Safety and Environmental Regulations.



Co-funded by
the European Union

JAHARP2021-03 was co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Innovation Council and SMEs Executive Agency (EISMEA). Neither the European Union nor the granting authority can be held responsible for them.