

# Personal and collective protective equipment market 2022

REPORT

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WARSAW 2022

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Protective equipment for upper and lower limbs, protective clothing for welders, welding barriers and acoustic panels in offices

**REPORT**

**CIOP**  **PIB**

WARSAW 2022

**This paper is published and based on the results of a research task carried out within the scope of the fifth stage of the National Programme “Improvement of safety and working conditions” supported within the scope of state services by the Ministry of Family and Social Policy.**

Task no. 4.SP.24, entitled “Development of a diagnosis and forecasting trends in the development of personal and collective protective equipment market in Poland”.

The Central Institute for Labour Protection – National Research Institute is the Programme’s main co-ordinator

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# Preface

Dear Sir and Madam,

We are pleased to present you with another report, which is the result of a survey conducted on the personal and collective protective equipment market. The purpose of this year's survey on which this material was based was to characterise the suppliers' market of protective equipment for upper and lower limbs, protective clothing for welders and selected collective protective equipment – welding barriers and acoustic panels for office rooms.

In an effort to ensure that workers in Poland are aware of hazards that can dramatically change their lives, and that employers are provided with the right tools and support in solving these problems, the Central Institute for Labour Protection - National Research Institute conducts research and development as well as dissemination activities related to occupational safety and health. It also strives to respond to the needs of employees and employers by offering them modern technical and organisational solutions as well as tools to support occupational safety and health management, certification services, Internet resources and publications.

Particularly in the current situation, when personal protective equipment suppliers are facing rising business costs and a possible decline in demand for the products they offer, given also the high inflation, we hope that the following publication will become a useful tool for them, providing information about the state of the industry market and pointing out the factors strengthening it.

The conclusions of the report's recommendations also indicate the importance of large-scale educational activities promoting the proper selection and use of personal protective equipment. It ultimately contributes to safer workplaces, but also brings long-term economic benefits to employers. Therefore, we believe that the following publication may become useful not only for suppliers of individual and collective protective equipment, but also to some extent for other people present in the labour market.

We would like to thank everyone who contributed to this report and invite you to read it.



Wiktor M. Zawieska  
Director CIOP-PIB

# **Market survey** of selected protective equipment





The market survey of selected personal (PPE) and collective (CPE) protective equipment carried out in 2022 is a continuation of last year's project aimed at providing information on the Polish market for suppliers and recipients of this type of equipment.

Last year we published a report on the market survey of respiratory, eye, face, head and hearing protection equipment, and due to the COVID-19 pandemic, medical masks.

The subject of this year's survey concerned the protection equipment for upper and lower limbs and protective clothing. In order to ensure that the market diagnostics and forecasts of this protective equipment are of interest and benefit to the entities operating on that market (in particular manufacturers, distributors, importers and also recipients of PPE), the survey takes into account only a number of product groups, as universal as possible, due to their wide range of application or their frequency of use. The survey also included selected CPE, which were subjected to a separate analysis, therefore giving a broader context to the attempt to characterise the PPE market. In the case of CPE, after consulting with specialists, the most repetitive equipment available on the market was selected: acoustic panels used in office rooms and welding barriers (curtains, screens, partitions, etc.).



# The object of the survey and the methodology used

The following PPE have been taken into account in the survey, specifying the factors or the designation of the selected equipment:

- protective equipment for upper limbs (gloves to protect against mechanical hazards, gloves to protect against chemicals),
- protective equipment for lower limbs (footwear to protect against falling elements, footwear to protect against slipping),
- protective clothing (for welders).

The CPE taken into account in the survey included:

- acoustic panels (used in the office working environment),
- welding barriers (curtains, partitions, screens, etc.).

The market survey of the above-mentioned protective equipment was carried out using a methodological triangulation, which takes into account:

1. **Analysis of secondary data (so-called desk research analysis)**, such as: data published by Polish and European public statistics; information obtained from business intelligence, market reports and information, offer price lists, databases of business entities, and certifying and auditing authorities; information available online, such as articles and web pages.
2. **Quantitative surveys carried out using the mixed-mode CATI/CAWI technique**  
The quantitative survey was carried out on the Polish sample N = 201 of the representatives of suppliers (manufacturers, importers, distributors and authorised representatives) and of the recipients of the selected PPE and CPE, selected in proportion to the number of entities in a given province. In addition, at least one company employing more than 50 persons from each province participated in the recipient survey.

**Table 1.** Size of CATI/CAWI survey sample among the suppliers and recipients of the selected personal and collective protective equipment

Province	Size of the sample of recipients of selected personal and collective protective equipment				Total	Size of the sample of suppliers of selected personal and collective protective equipment
	Size of the company (number of employees)					
	Up to 9	10-49	50-249	250 and more		
Lower Silesia	-	1	-	2	3	11
Kuyavian-Pomeranian	-	-	1	-	1	8
Lublin	-	-	3	-	3	5
Lubuskie	-	-	1	-	1	4
Łódź	-	-	2	2	4	10
Lesser Poland	-	-	-	2	2	18
Mazovia	-	-	3	4	7	25
Opolskie	-	-	1	-	1	4
Subcarpathia	-	-	4	-	4	4
Podlesia	-	-	-	1	1	3
Pomerania	-	1	3	4	8	8
Silesia	-	-	2	1	3	20
Holy Cross Province	1	-	1	-	2	4
Warmia-Masuria	-	-	-	2	2	4
Greater Poland	-	1	2	2	5	16
West Pomerania	-	-	3	1	4	6
<b>Total</b>	<b>1</b>	<b>3</b>	<b>26</b>	<b>21</b>	<b>51</b>	<b>150</b>

Source: ASM's own study



Recipients and suppliers were selected for the survey, taking into account the division into PPE and CPE. The information was obtained from:

- N = 130 suppliers of selected PPE,
- N = 62 suppliers of selected CPE,
- N = 51 recipients of selected PPE,
- N = 18 recipients of selected CPE.

**Table 2.** The number of suppliers and recipients of the quantitative survey according to the individual products that are the subject of the survey

	Suppliers	Recipients
<b>Personal protective equipment</b>	<b>130</b>	<b>51</b>
Gloves to protect against mechanical hazards	114	45
Gloves to protect against chemicals	103	40
Footwear to protect against falling elements	107	46
Footwear to protect against slipping	104	46
Protective clothing for welders	105	29
<b>Collective protective equipment</b>	<b>62</b>	<b>18</b>
Collective protective equipment	25	12
Welding barriers (curtains, screens, partitions)	44	11

Source: ASM's own study

### 3. Enhanced Individual Telephone Interviews (ITI)

The qualitative surveys consisted of a detailed, thorough conversation with the respondent. ITI interviews were carried out to deepen the information acquired during quantitative surveys. A total of 20 experts participated in qualitative interviews (consisting of: representatives of suppliers of PPE and CPE, recipients providing selected protective equipment in workplaces, OSH specialists, representatives of market surveillance authorities and R&D environment).

# Market analysis

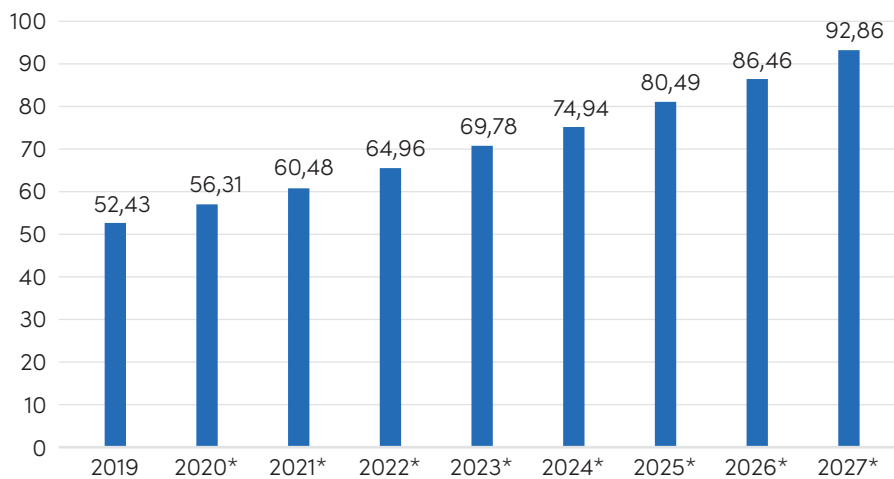


# Global protective equipment market

## A. Personal protective equipment

The global PPE market amounted to USD 52.43 billion in 2019. The forecasts for the years 2020–2027 assume the market’s average annual increase of 7.4% (CAGR). According to these forecasts, in 2022, the PPE market value will amount to USD 64.96 billion and will increase to USD 92.86 billion by 2027.

**Figure 1.** The global PPE market value in 2019–2027 (in USD billion)



\* forecast

Source: ASM based on Statista data

According to the Grand View Research report<sup>1</sup>, the largest share of the revenues of the global PPE market in 2020 (28%) corresponded to the hand protection product segment. The hazards associated with harmful and hazardous chemicals, contact with hot objects and protruding, sharp or rough elements are likely to stimulate demand for safety gloves in the construction industry, food processing, oil and gas, health care and metal manufacturing. The global market of industrial safety gloves to protect against mechanical hazards amounted to USD 2 billion in 2018<sup>2</sup>. According to the Global Market Insights report, the best development forecasts for those product categories are found in several sectors/areas, such as: mining, construction, automotive, assembly activities, heavy machine equipment manufacturing, and industrial handling and packaging. The extractive industry has a high demand for gloves due to the handling of heavy machinery and equipment.

<sup>1</sup> Report from the analysis of the size, share and trends in the PPE market by product (respiratory protection, protective clothing), by final use (healthcare, manufacturing), by region and segment forecasts, 2021–2028.

<sup>2</sup> Global Market Insights Industrial Safety Gloves Market Size By Product (Mechanical/[Multi-Purpose, Cut Protection, Oil Repellent, Specialized, Back Hand Impact Protection], Chemical & Liquid Protection/[Chemical Solutions, Single Use/ Disposable], Thermal/[Arc Flash], Special Protection), By Material (Nitrile Gloves, Natural Rubber Gloves, Vinyl Gloves, Neoprene Gloves, Polyethylene Gloves), By Application (Automotive, Chemical, Machinery, Metal Fabrication, Oil & Gas, Mining), Industry Analysis Report, Regional Outlook, Growth Potential, Price Trends, Competitive Market Share & Forecast, 2019–2025

Gloves to protect against mechanical hazards provide excellent protection against cuts and injuries due to their resistance to cutting, piercing or abrasion. These characteristics make these products desirable in the market. In the machinery and equipment market alone, 2018 saw a demand of more than 750 million gloves to protect against mechanical factors.

The second largest product segment is protective clothing, which consists of clothing to protect against high temperature and flames, chemical-resistant clothing, clean room clothing and clothing to protect against mechanical damage. The high quality of these products has resulted in their increased use, which has stimulated demand for them in different industries.

Safety footwear also represented a significant market share in the PPE sales market. It is expected that during the forecast period, CAGR will reach a level of 6.8% due to high demand for products. Increasing employers' awareness about protecting workers from foot injuries caused by chainsaw cuts, electric shock and midfoot impacts (caused by falling products or materials) is likely to have a positive impact on segment development.

According to the Industrial Protective Footwear Market Research Report, Analysis and Forecast<sup>3</sup>, the global industrial safety footwear market was valued at USD 5.2 billion in 2021 and is expected to reach USD 6.9 billion by 2028. The greatest demand for footwear to protect against falling elements is generated by the manufacturing and construction sectors. According to Global Market Insights<sup>4</sup>, the global industrial footwear market amounted to over USD 9 billion in 2021. The demand for protective footwear has remained high in recent years, mainly due to the increasing focus on reducing the number of victims of accidents at work. An increasing number of workplace injuries will contribute to the growth of this segment, which will generate revenues in excess of USD 3 billion by 2030. Development prospects are also found in the agricultural segment. In 2021, this segment achieved sales of more than 50 million pairs of safety footwear. It is expected that by 2030 more than 57 million pairs will be sold.

## B. Collective protective equipment

**In the case of the global architectural acoustic panels market, according to the Fortune Business Insights report, its size was valued at USD 7.37 billion in 2021. This market is expected to increase from USD 7.55 billion in 2022 to USD 10.59 billion in 2029 showing a CAGR of 5%. In 2021, Europe held the second largest share of the global market of acoustic panels for office rooms due to both the location of many international corporations that use the panels in offices to meet stringent regulations, and standards of living in the region.**

<sup>3</sup> DataVagyanik

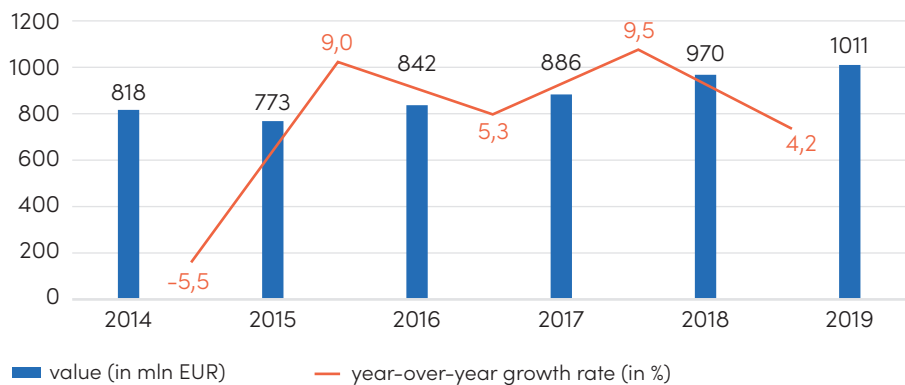
<sup>4</sup> Industrial Safety Footwear Market Size By Product (Shoes/(By Material/[Leather (Construction, Oil & Gas, Transport, Mining, Food, Pharmaceuticals, Agriculture, Fishery), Rubber (Construction, Oil & Gas, Transport, Mining, Food, Pharmaceuticals, Agriculture, Fishery), PVC (Construction, Oil & Gas, Transport, Mining, Food, Pharmaceuticals, Agriculture, Fishery), PU (Construction, Oil & Gas, Transport, Mining, Food, Pharmaceuticals, Agriculture, Fishery)]), Boots/(By Material/[Leather (Construction, Oil & Gas, Transport, Mining, Food, Pharmaceuticals, Agriculture, Fishery), Rubber (Construction, Oil & Gas, Transport, Mining, Food, Pharmaceuticals, Agriculture, Fishery), PVC (Construction, Oil & Gas, Transport, Mining, Food, Pharmaceuticals, Agriculture, Fishery), PU (Construction, Oil & Gas, Transport, Mining, Food, Pharmaceuticals, Agriculture, Fishery)]), Industry Analysis Report, Regional Outlook, Covid-19 Impact Analysis, Growth Potential, Price Trends, Competitive Market Share & Forecast, 2022-2030

# The market for protective equipment in the European Union

In publicly available sources of information on PPE in the EU, there are no data on protective clothing and therefore they are not included in the following subchapter.

The EU28 countries produce by far the most safety footwear. The manufacturing increased from EUR 818,34 million in 2014 to EUR 1 billion in 2019. There has therefore been an increase of 23.6% in five years. During the analysed period, the highest increase in production value compared to the previous year occurred in 2018 and 2016.

**Figure 2.** Manufacturing value of footwear with protective metal toe cap in EU28 between 2014 and 2019

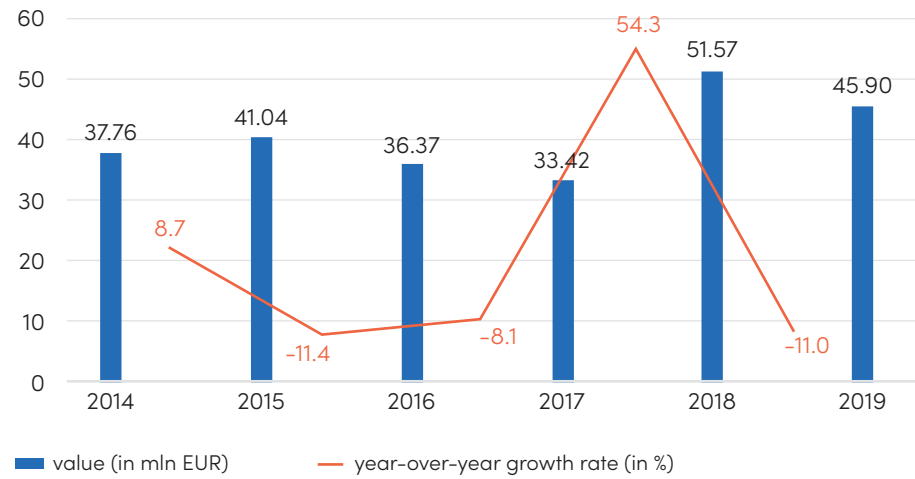


Source: ASM based on Statista data

The production of safety gloves in EU28 is no longer significant. In 2014, the manufacturing value of safety gloves in EU28 countries amounted to EUR 37,76 million and despite an increase in the manufacturing value in the following year, the next two years experienced a decrease in the production volume of this type of PPE. The year 2018 resulted in a 54.3% increase in the manufacturing of safety gloves, reaching a value of EUR 51,57 million. However, already in 2019, the manufacturing value decreased to EUR 45,9 million (an 11% decrease relative to 2018).



**Figure 3.** The manufacturing value of safety gloves in EU28 between 2014 and 2019



Source: ASM based on Statista data



# Sectors of the use of personal protective equipment and collective protective equipment and the workers employed in hazardous conditions in Poland

The recipients of PPE are all businesses in which workers are exposed to bodily injury during their work. PPE and CPE are used in particular in the following industries:

- production,
- construction,
- food industry (processing),
- mining,
- chemical and petroleum industry,
- healthcare and pharmaceutical industry,
- agriculture (the surveyed CPE does not apply here).

Polish employees are most vulnerable to working environment hazards. In 2021, almost 339,000 people were employed under such conditions. This is 2.7% more than the year before and 7.1% more than in 2019. Noise was the most frequent hazard in the working environment (more than 182,000 people were exposed to noise at the workplace in 2021, almost the same as in the previous year and 2.2% less than in 2019).

In 2021, the number of employees exposed to mechanical factors related to particularly hazardous machinery increased in comparison to 2020. There was an annual increase of 14.1%.

At the same time, last year, an occupational risk assessment was carried out in Polish businesses for 2.48 million employees, and for 68.6% of the job positions, occupational risks were eliminated or reduced. PPE was used by almost 1.3 million employees. The largest number of employees for whom, in order to eliminate or reduce occupational risk, some form of personal protective equipment was used in 2021, was in the provinces of Mazovia (19.9%), Silesia (17.3%) and Greater Poland (9.8%).

# Work accidents

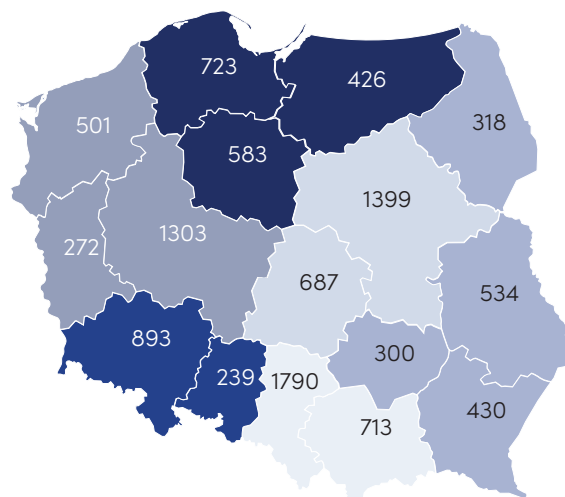
The demand for PPE and PPE depends on the number and intensity of risk factors, but also on the awareness of company managers and workers themselves. As a rule, the greatest demand is generated by sectors most frequently exposed to accidents at work. According to data from the Central Statistical Office (GUS), 11,111 people injured by accidents at work were reported in the first quarter of 2022, 2.0% more than in the first quarter of 2021. The number of injured people per one thousand employees has also increased (the accident rate has increased from 0.81 to 0.82).

The highest number of victims of accidents at work in the first part of the current year was recorded in three sectors:

- industrial processing – 3,468 victims,
- trade, repair of motor vehicles – 1,425 victims,
- healthcare and social work – 1,195 victims.

Many individuals were also injured at work in the transport and warehouse management sector (986) and in the construction industry (602). All the above-mentioned industries will probably generate the greatest demand for PPE and CPE.

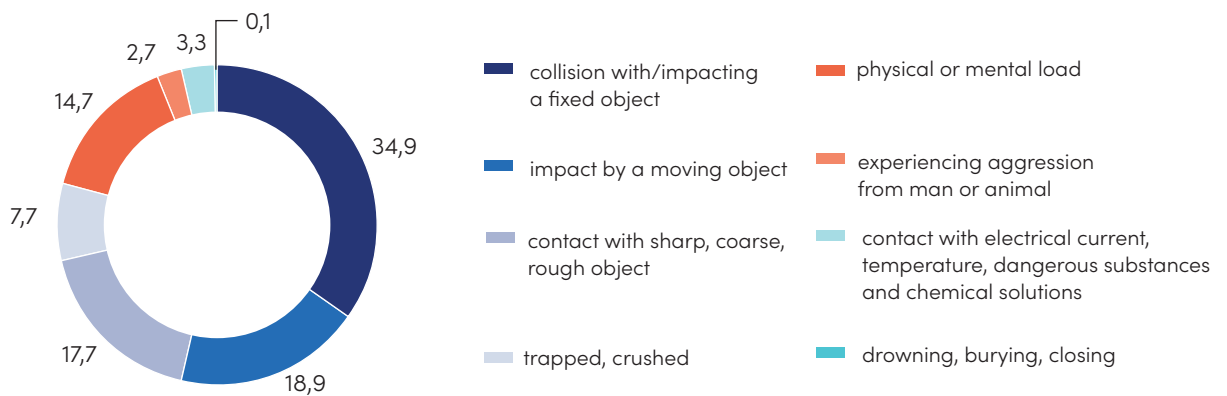
**Map 1.** Victims of accidents at work in Q1 2022



Source: ASM based on GUS data

The people injured the most by accidents at work are those injured as a result of a collision with a fixed object (34.9%). Impacts by a moving object cause injuries in 18.9% of cases. A total of 17.7% of accidents at work result from contact with a sharp, coarse or rough object.

**Figure 4.** Victims of accidents at work in the first quarter of 2022 by events causing injury (%)

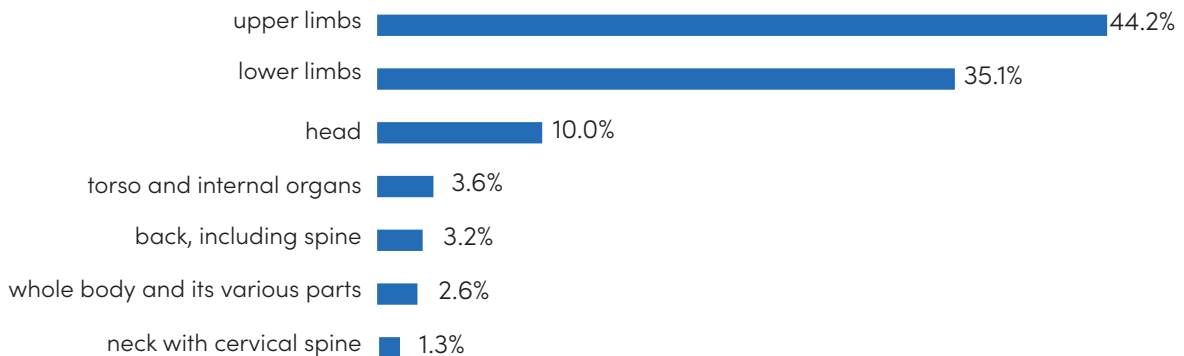


Source: ASM based on GUS data

The most common cause of accidents at work is improper employee behaviour (61.4%). Only 1.8% of accidents at work occur as a result of the employee not using protective equipment.

Accidents at work occur most frequently when the employee is moving (40.3%). Only 12% of injuries occur while performing work with manual tools and 8.8% during machine operation. The most common injuries include those of upper limbs (44.2%) and lower limbs (35.1%). It follows from these data that for PPE, arm and leg protection equipment will generate the largest demand.

**Figure 5.** Victims of accidents at work by the location of the injury in the first quarter of 2022



Source: ASM based on GUS data

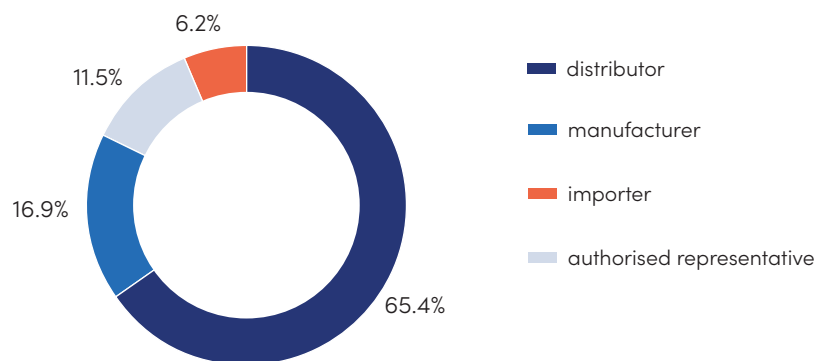
# Characteristics of suppliers

The identification of entities involved in both the production and distribution of PPE and CPE was not easy, as there is neither a section nor a dedicated department for PPE and CPE on the Polish Classification of Activity (PCA) list. An additional difficulty was that only selected PPE and CPE had to be taken into account for the analysis.

## Suppliers of personal protective equipment

**In the quantitative survey carried out among selected suppliers of PPE, 65.4% of the entities were part of the distributor group and 16.9% of the manufacturers. Respondents could only assign themselves to one of the groups that best characterised the entity's main activity. Among the manufacturers, only N = 1 declared that it has its own research department.**

**Figure 6.** Structure of the surveyed suppliers of selected PPE (N = 130)



Source: ASM, CATI survey.

Among the surveyed suppliers of the selected PPE, small and medium-sized enterprises with up to 49 employees were the dominant group (89.2%). A total of 7.7% of respondents employed 50–249 people, while 3.1% employed 250+ employees.

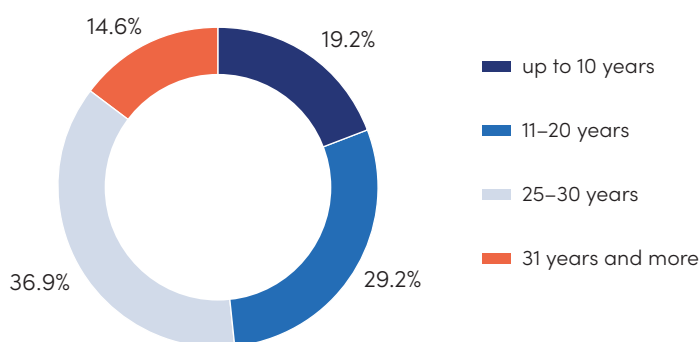
**Table 3.** Struktura dostawców wybranych ŚOI według wielkości przedsiębiorstwa (N = 130)

Size of enterprise	Share (%)
Up to 9 employees	66.9
10-49 employees	22.3
50-249 employees	7.7
250 and more employees	3.1

Source: ASM, CATI survey

As many as 80.2% of the surveyed PPE suppliers have been active on the market for more than 10 years. A total of 14.6% of respondents declared to have been active on the market for over 30 years. Only one supplier has operated on the PPE market for 1 year.

**Figure 7.** The PPE suppliers' period of operation on the market (N = 130)



Source: ASM, CATI survey

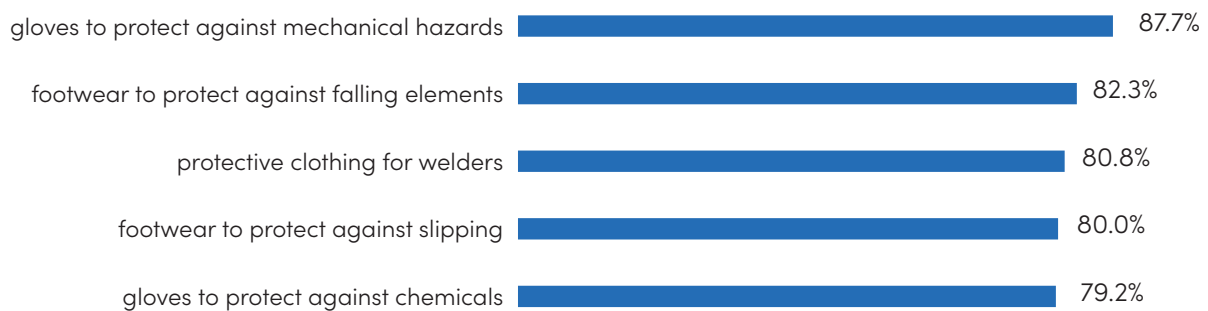
A total of 97.7% of the surveyed suppliers are companies with only Polish capital. Only 3 suppliers declared that the company holds foreign capital. Among them:

- N = 1 holds Danish capital,
- N = 1 holds US and Italian capital,
- N = 1 holds United Kingdom and French capital.

The vast majority of the surveyed suppliers diversify their PPE product range. A total of 86.2% of suppliers have at least two types of PPE that are subject to analysis. Then 63.8% of suppliers declared that they offer all types of analysed PPE (gloves to protect against mechanical hazards, gloves to protect against chemicals, footwear to protect against falling elements, footwear to protect against slipping and protective clothing for welders).

The largest number of PPE suppliers (87.7%) offer gloves to protect against mechanical hazards, and the smallest (79.2%) offer gloves to protect against chemicals. Every third supplier of PPE declared that it also offers CPE.

**Figure 8.** Selected PPE included in the PPE suppliers' offering (N = 130)

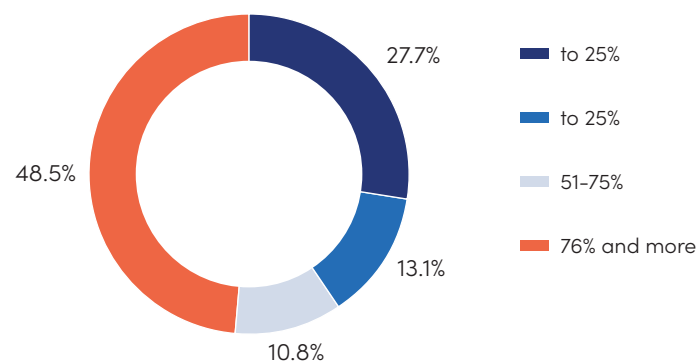


Source: ASM, CATI survey

For most of the surveyed suppliers (59.2%), PPE accounts for more than 50% of the company's total manufacturing/distribution offering. Businesses conducting their activity in different areas have expanded their offering with PPE, which is linked to an increased market demand for this product range.

It is also worth noting that for 22.3% of the surveyed suppliers, PPE are the only products in their offering (100% share). Moreover, for 39.2% of the suppliers, PPE represents at least 90% of the total offering.

**Figure 9.** Percentage of personal protective equipment in their suppliers' offering (N = 130)



Source: ASM, CATI survey

In addition to PPE, the suppliers include in their offering in particular: CPE, welding equipment and materials, firefighting equipment, e.g. fire extinguishers.



**Table 4.** Share of individual products in the personal protective equipment offering (N = 130)

Individual personal protective equipment	Share (%)
Gloves to protect against mechanical hazards	14.24
Gloves to protect against chemicals	7.53
Footwear to protect against falling elements	14.45
Footwear to protect against slipping	13.98
Protective clothing for welders	7.40
Other PPE products	42.40
<b>TOTAL</b>	<b>100</b>

Source: ASM, CATI survey

In total, 41.5% of the surveyed suppliers are directing their offering to entities throughout Poland and 20.8% to businesses both in Poland and abroad. Almost every third PPE supplier operates only locally.

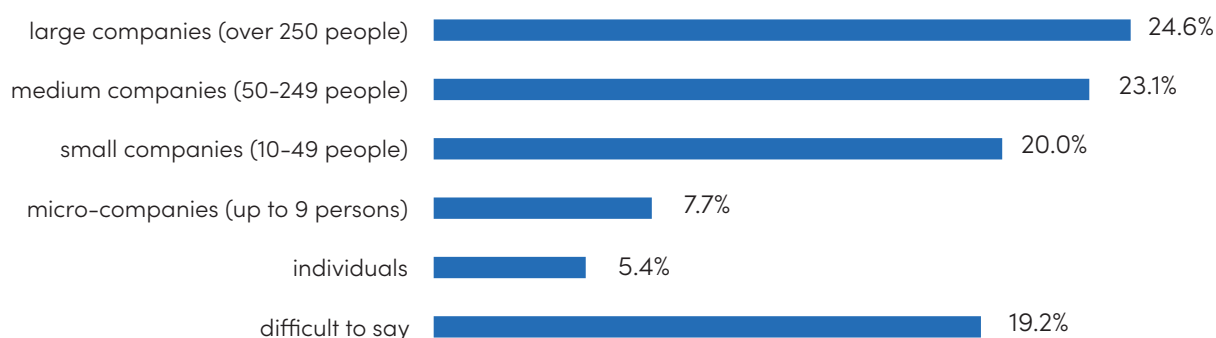
**Figure 10.** Entities to which the personal protective equipment suppliers direct their offering (N = 130)



Source: ASM, CATI survey

The highest revenue for PPE suppliers is generated by large companies with more than 250 employees. The revenue generated by the PPE suppliers is therefore directly proportional to the size of the company's workforce (the larger the workforce, the higher the sales revenue).

**Figure 11.** Recipients generating the highest revenue for personal protective equipment suppliers (N = 130)



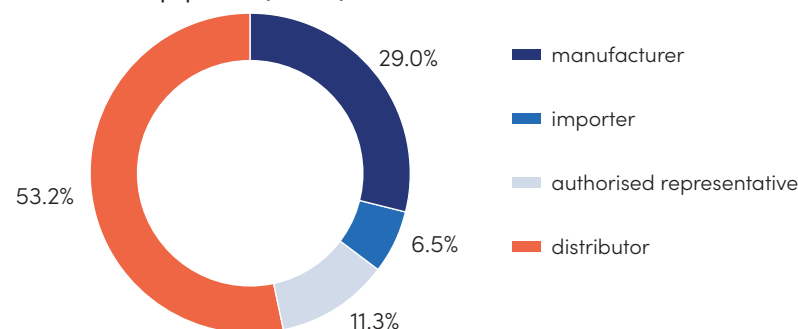
Source: ASM, CATI survey

PPE suppliers were asked to assess their financial situation. As much as 86.9% of them agreed that their product prices will increase in 2023. Large increases in business costs are a large problem for 73.1% of respondents. In the next 3 years, sales growth is expected by nearly every fourth PPE supplier.

## Suppliers of selected collective protective equipment

In the quantitative survey carried out among selected suppliers of CPE, 53.2% of the entities were part of the distributor group, and 29.0% of the manufacturers. Respondents could only assign themselves to one of the groups that best characterised the entity's main activity. N = 4 of manufacturers declared that they have their own research department.

**Figure 12.** Structure of the surveyed suppliers of selected collective protection equipment (N = 62)

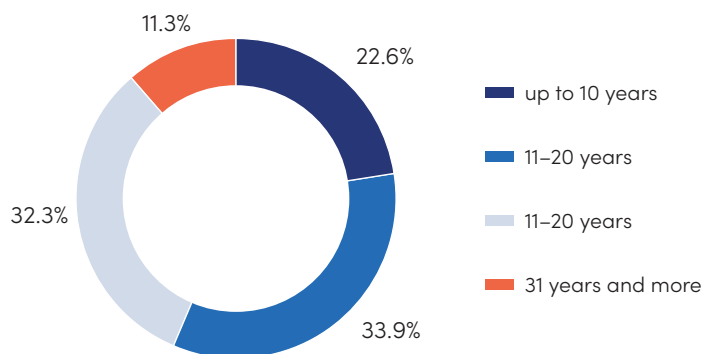


Source: ASM, CATI survey

Among the surveyed suppliers of the selected CPE, small and medium-sized enterprises with up to 49 employees were the dominant group (83.9%). A total of 16.1% of respondents employed 50 and more.

The vast majority (98.4%) of the surveyed companies have operated on the CPE market for at least 5 years, with none of the companies operating for less than 1 year. As many as 77.4% of the surveyed CPE suppliers have been active on the market for more than 10 years. Almost every third respondent has operated for 21–30 years.

**Figure 13.** The collective protective equipment suppliers' period of operation on the market (N = 62)



Source: ASM, CATI survey

As many as 98.4% of the surveyed CPE suppliers are companies with only Polish capital. Only one respondent declared that the company holds foreign capital (British and French).

Only 11.3% of the suppliers declared that they offer all the analysed CPE (acoustic panels in office rooms, welding barriers). Most offer only one of the analysed CPE products.

The largest CPE suppliers (71.0%) offer welding barriers. As many as 68.9% of the CPE suppliers also offer PPE.

For the vast majority of the surveyed suppliers (85.5%), CPE represents up to 25% of the company's total production/distribution offer. It is worth noting that more than half of the respondents (51.6%) declared that CPE represents up to 5% of the company's total offering.

**Figure 14.** Percentage of collective protective equipment in their suppliers' offering (N = 62)



Source: ASM, CATI survey

Apart from CPE, their suppliers offer in particular: PPE, welding equipment and materials, furniture.

The suppliers were asked what percentage the selected products have in their CPE offering. Only 9.55% of the total CPE offering consists of analysed products.

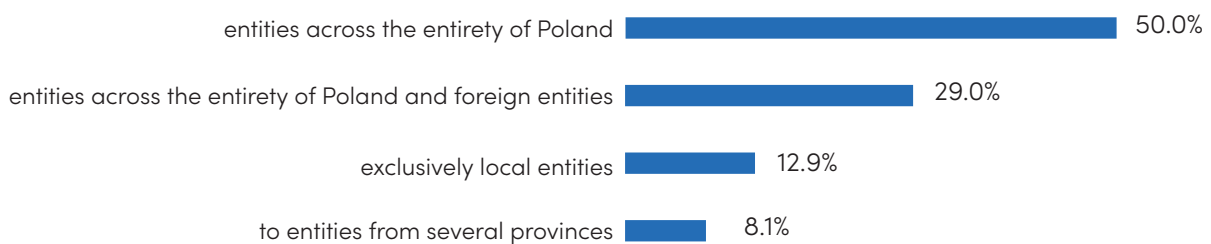
**Table 5.** Share of individual products in the collective protective equipment (N = 62)

Individual collective protective equipment	Share (in)
Acoustic panels in office rooms	6.60
Welding barriers	2.95
Other CPE products	90.45
<b>TOTAL</b>	<b>100</b>

Source: ASM, CATI survey

A total of 50.0% of the surveyed suppliers direct their offering to entities across the entirety of Poland, and 29.0% to both businesses in Poland and abroad. Only 12.9% of CPE suppliers operate locally.

**Figure 15.** Entities to which the collective protective equipment suppliers direct their offering (N = 62)



Source: ASM, CATI survey

The highest revenue for CPE suppliers is generated by large companies with more than 250 employees. Close to every fourth respondent encountered difficulties when trying to indicate which consumers generate the highest revenue for the company.

# Competitiveness level in the supplier market

## Personal protective equipment

The vast majority of the surveyed PPE suppliers declared that competition on the PPE market was strong or very strong. There are many small and very small manufacturers and distributors, but there are also several larger players with well-established positions and significant market shares.

**Companies, both manufacturers and distributors, present on the Polish PPE market are mainly competing with prices, quality, innovative solutions and product availability. Level of servicing, handling of complaints and customer care are also important, i.e. everything that the manufacturer or distributor offers besides the PPE itself, such as scanning feet to support the proper selection of protective equipment or workplace audits to select the right solutions.**

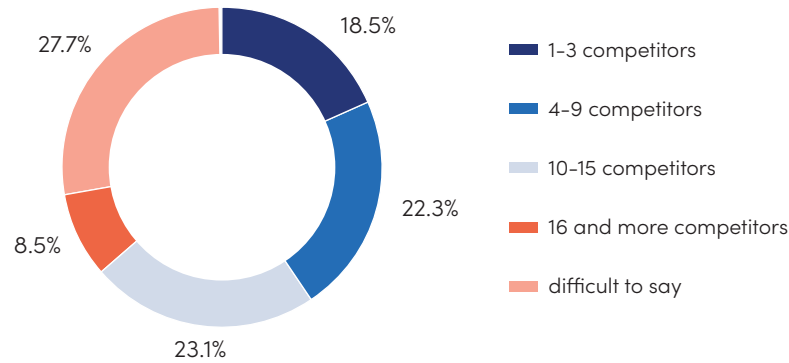
In the opinion of the surveyed PPE recipients, competitive advantages may also include issues such as the provision of non-standard orders, or the fact that the manufacturer's/distributor's representative arrives at their company and advises which specific products will be appropriate, measures the workers in order to select the appropriate size of PPE, etc. Also, solutions such as B2B platforms that facilitate placing orders are an additional advantage for suppliers in the opinion of the PPE recipients.

From the point of view of PPE recipients, companies providing solutions in this area also compete on the breadth of their product range. Some suppliers are authorised dealers of one manufacturer and offer only its products, while other distributors offer products from many different manufacturers.

**The importance of product availability arises from COVID-19 pandemic constraints, which, although they are no longer in place in most countries or are being applied to a more limited degree, continue to affect supply chain disruptions, both in terms of components and raw materials for manufacturers and finished products in the context of distributors. Some companies have protected themselves by increasing their inventory, but typically they are stockpiled for existing customers, and handling additional orders could be a problem.**

The surveyed suppliers indicated that there are eight major competitors on the PPE market (average). In total, 18.5% of respondents declared that the number of key competitors did not exceed three, and more than every fourth one could not indicate a specific number.

**Figure 16.** Number of major competitors on the personal protective equipment market according to the suppliers (N = 130)



Source: ASM, CATI survey

In particular, large manufacturers have unquestionable competitive advantages, as they have their own factories and can control the entire manufacturing process. The advantage is also held by those companies that have a wide range of products covering all PPE. However, Polish and European manufacturers present on the Polish PPE market still have to face a high share of imported products, e.g. from China, which are significantly cheaper but worse in quality.

Differences between companies located in Poland can be observed. Often those with foreign capital transfer OSH requirements from their main offices abroad, and therefore pay more attention to better quality products. Conversely, companies with Polish capital often only look for the price of a single purchase of safety gloves or footwear.

During the enhanced ITI interviews, the PPE suppliers were asked about the most important players on the market, which are shown by the graphics below. These are manufacturers and distributors who, according to the PPE suppliers, are the most important businesses in the industry.

**Graphic 1.** Top distributors of personal protective equipment according to the suppliers (N = 6)



Source: ASM, ITI survey

The PPE suppliers emphasised that although there are few Polish manufacturers, those who are present on the market have a strong, well-established position and are known among the recipients.

According to one of the PPE suppliers, Polish glove manufacturers mainly supply ordinary, knitted or crocheted products, while the coated ones, which protect against chemicals, originate mainly from foreign manufacturers. Polish companies manufacturing PPE, that were mentioned by the suppliers include: Strzelce Opolskie (JS Gloves), Prortor, Demar, PW Krystian.

**Graphic 2.** The most important manufacturers of PPE in the opinion of the personal protective equipment suppliers (N = 6)



Source: ASM, ITI survey

Competition on the PPE market is very strong. It is therefore worth paying attention to the factors that determine the selection of the PPE supplier. In the opinion of the PPE recipients, the price of the product is the most important. In the opinion of the recipients, there are many PPE suppliers and, for example, in the case of gloves, they have a very diverse product range in terms of price, ranging from PLN 1.5 to gloves that even cost PLN 150. However, the problem is finding good quality products at an affordable price. There are far fewer suppliers of protective clothing for welders. As underlined by one of the recipients, there are few suppliers on the Polish market who offer good quality protective clothing.

Product certification and the availability of products for immediate delivery are also important for the PPE recipients. Among the 'other' responses, the respondents indicated the quality of the product and brand loyalty. Only 7.8% of the recipients indicated that the PPE products are selected through a tender. Large numbers of suppliers always participate in these tenders. Companies also test products. During these tests, the employees receive the products of the individual manufacturers for a certain period of time and determine which ones they find best for their work. Contracts are signed on this basis.



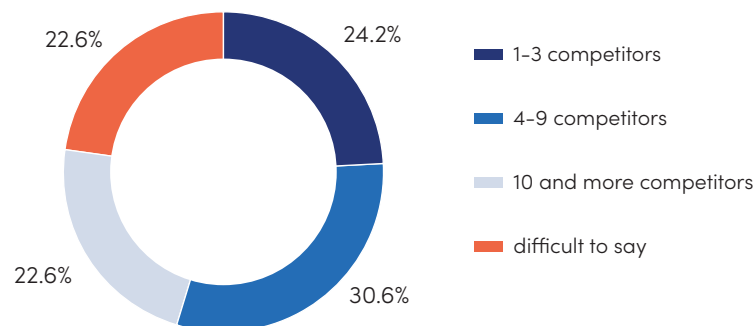
*„The test period lasts three months. During this time, we have over 200 models of gloves to test from nearly forty companies. Our purchasing department sends our specification of requirements to our bidders database, and then those companies, if they can offer a product that we are looking for, submit an official offer and test samples.”*

## Collective protective equipment

**Competition in the CPE market is less intense than in the PPE market. However, most CPE suppliers assess the competition level as high or very high.**

The surveyed suppliers indicated that there are six major competitors (average) on the CPE market. In total, 24.2% of respondents declared that the number of key competitors does not exceed three. It is worth noting that 22.6% of the surveyed suppliers could not indicate the number of key competitors on the CPE market.

**Figure 17.** Number of major competitors on the collective protective equipment market according to the suppliers (N = 62)



Source: ASM, CATI survey

In the Polish CPE market, in the opinion of the suppliers, there are mainly distributors of foreign brands. This is especially visible in the case of welding barriers. However, when it comes to acoustic panels for office rooms, there are several Polish manufacturers, e.g. Bejot. According to the suppliers, this market is filled with a large number of competing companies and is rather fragmented. The most important players among the CPE manufacturers and distributors, according to their suppliers, are presented in the graph below.

**Graph 3.** The most important suppliers of the selected collective protection equipment in the opinion of the suppliers (N = 4)

**Most important acoustic panel suppliers**



**Most important welding barrier suppliers**



Source: ASM, ITI survey

The companies dealing with CPE in Poland compete primarily with prices and the colour range on offer, e.g. for welding barriers. The speed of delivery is also important, as well as (for acoustic panels for office rooms) acoustic parameters and certificates. In Poland, in the opinion of suppliers, CPE certificates are unnecessary, so their possession may be a competitive advantage.

The technical requirements for CPE products are clearly defined by regulations and must be met by the manufacturers, so this is not an aspect that enables a company to gain a competitive advantage in the market. However, in the opinion of suppliers, innovation in terms of consuming less materials while maintaining the necessary parameters on a given surface may provide an advantage over competition.

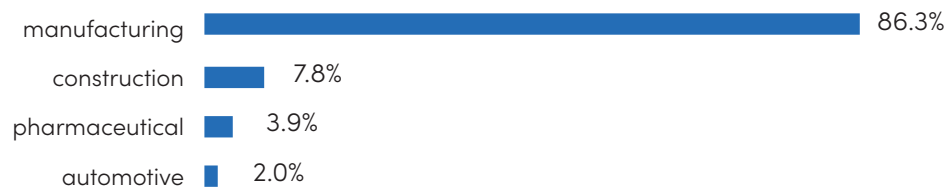
Although competition on the CPE market is assessed by suppliers as less than on the PPE market, it still remains at a high level. It is therefore necessary to pay attention to the factors that determine the selection of the CPE supplier. The most important for the CPE recipients is the product certificate (88.9%), and only then its price (77.8%). Products that are available for immediate delivery is also important.

# Recipient characteristics

## Recipients of selected personal protective equipment

The vast majority of the surveyed PPE recipients are active in a widely defined manufacturing sector, which is a part of section 'C' in the PCA list. A total of 7.8% of respondents were representatives of the construction sector.

**Figure 18.** Sector in which personal protective equipment recipients operate (N = 51)

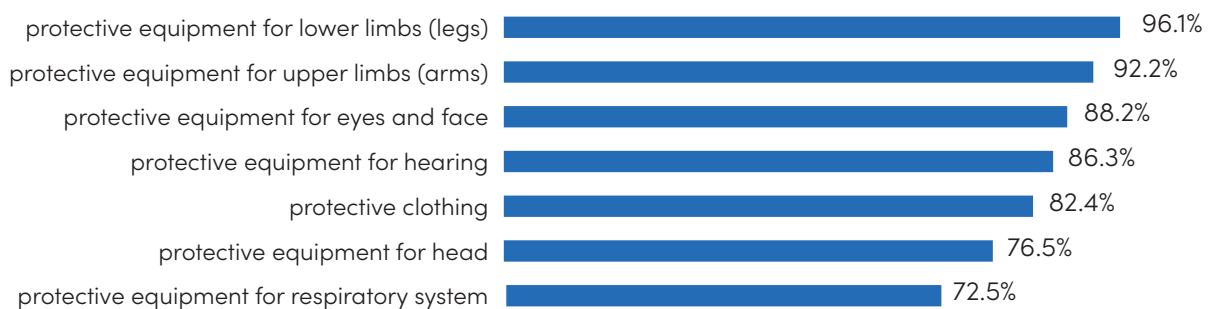


Source: ASM, CATI/CAWI survey

Among the surveyed recipients of the selected PPE, medium-sized and large businesses with more than 50 employees dominated (92.2%). Only 5.9% of respondents employed 10-49 people, while 2.0% employed up to 9 employees.

The surveyed recipients use a range of PPE. Respondents most often source lower (96.1%) and upper (92.2%) limb protection equipment. Eye and face protection equipment (88.2%) and hearing protection equipment (86.3%) are also very important. The surveyed suppliers use respiratory protection equipment least frequently. However, the percentage of surveyed entities applying this precautionary measure is still high (72.5%).

**Wykres 19.** Personal protective equipment used by their recipients (N = 51)



Source: ASM, CATI/CAWI survey

Taking into account the selected PPE, the recipients most often source footwear to protect against falling elements (90.2%) and footwear to protect against slipping (90.2%). More often, respondents use gloves to protect against mechanical hazards than against chemicals. A total of 56.9% of the PPE recipients also use protective clothing for welders.

**Table 6.** Selected personal protective equipment used by their recipients (N = 51)

Selected personal protective equipment	% of users
Gloves to protect against mechanical hazards	88.2
Gloves to protect against chemicals	78.4
Footwear to protect against falling elements	90.2
Footwear to protect against slipping	90.2
Protective clothing for welders	56.9

Źródło: ASM, badanie CATI/CAWI.

In the opinion of the suppliers, the PPE recipients and therefore the end-users are very often not aware that better safety gloves or footwear exist on the market. Yet, even if they have such knowledge, they are usually not the decision makers for the PPE purchased by the business. However, they are able to best assess the quality and functionality of PPE, and their opinion is the most important for manufacturers.

In the opinion of the PPE suppliers, recipients and end-users lack work safety awareness. Decision makers for the purchase of PPE in Polish businesses are still largely guided by the cost of this purchase – so cheaper gloves or footwear are often selected, including those originating from China, for example. OSH specialists and decision makers are not always aware of the benefits of purchasing better quality and more expensive personal protection equipment, and how this translates into a reduction in costs related to accidents at work.

## Recipients of selected collective protective equipment

The vast majority of the surveyed CPE recipients operate in a widely defined manufacturing sector (83.3%). In total, 16.7% of respondents were representatives of the construction sector.

**Figure 20.** Sector in which collective protective equipment recipients operate (N = 18)

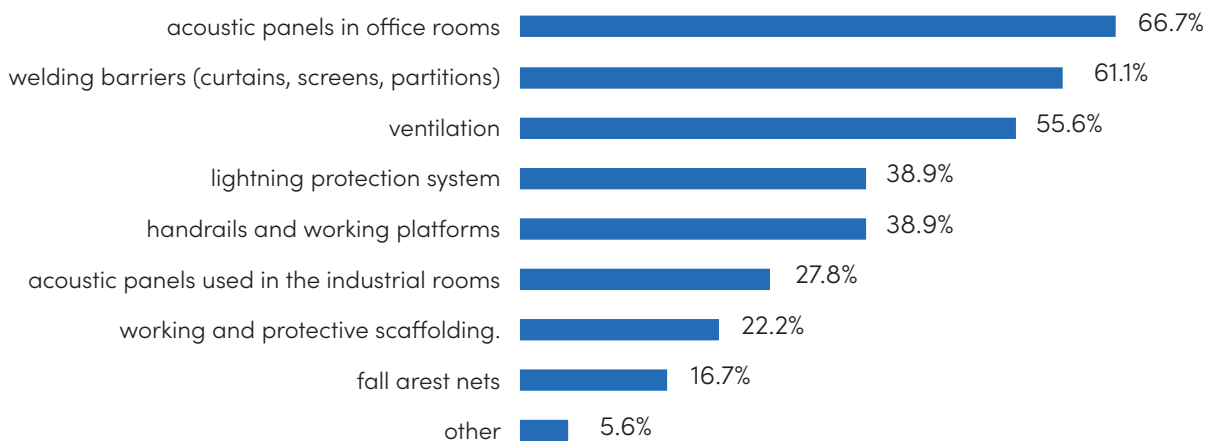


Source: ASM, CATI/CAWI survey

Among the surveyed recipients of the selected CPE, medium-sized and large businesses with more than 50 employees dominated (88.9%). Only 5.6% of respondents employed 10–49 people, while 5.6% employed up to 9 employees.

The CPE recipients most commonly source acoustic panels for office rooms (66.7%) and welding barriers (61.1%), which results from the selection of respondents (only respondents who are recipients of these products were eligible for the survey). Among the subsequent CPE used in companies, the surveyed entities indicated ventilation systems (55.6%), lightning protection systems (38.9%), handrails and working platforms (38.9%).

**Figure 21.** Collective protective equipment used by their recipients (N = 18)



Source: ASM, CATI/CAWI survey

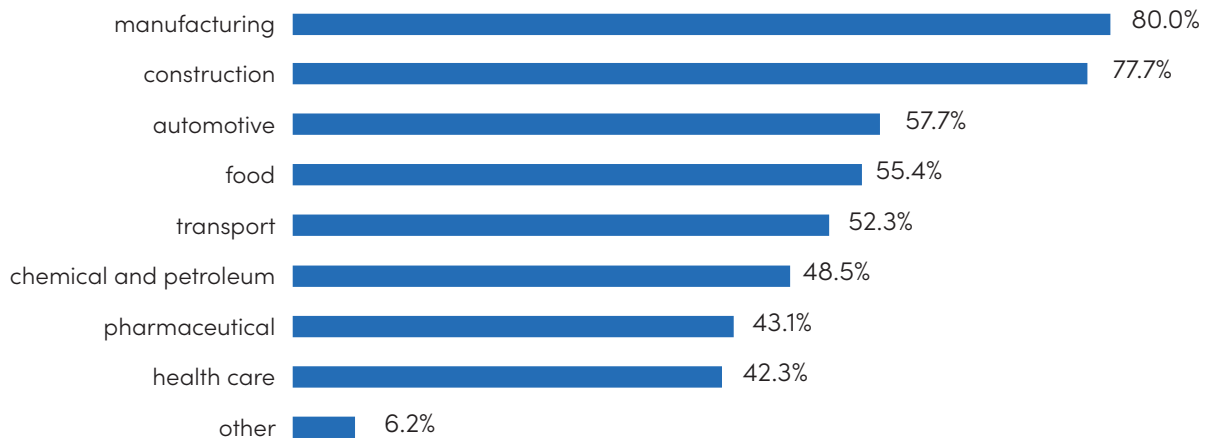
In the opinion of the suppliers, CPE recipients do not look for innovative solutions because most of them only want to comply with regulatory requirements. As a general rule, they do not source these products for their own needs, but are rather interested in them out of necessity.

# Personal and collective protective equipment distribution

## Personal protective equipment

The surveyed suppliers diversify sales of PPE to different sectors. The main recipients of PPE are mainly the manufacturing and construction sectors. In total, 57.7% of suppliers deliver PPE to the automotive sector and 55.4% to the food sector.

**Figure 22.** Sectors to which the personal protective equipment suppliers' offer is addressed (N = 130)

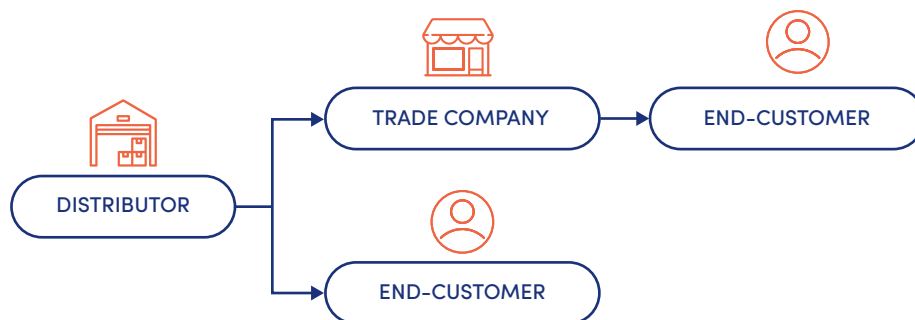


Source: ASM, CATI survey

The sale of PPE by distributors takes place in two ways:

- directly to the end-user,
- sales to other trading companies which then distribute products to end-users.

**Graphic 4.** Distribution of the personal protective equipment distributors

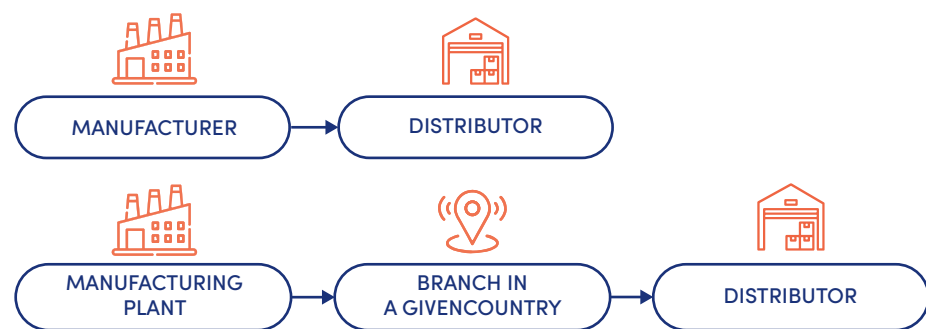


Source: ASM, ITI survey

PPE manufacturers typically sell their products to distributors, who then sell them to end-users, i.e. workplaces. Sometimes, the manufacturer has several key end-users who buy PPE directly from the manufacturer, bypassing the distributor.

Where the producer is an international conglomerate, the distribution is somewhat different. PPE from manufacturing facilities is distributed to branches in each country and only then domestic subsidiaries distribute the products to their distributors and end-users.

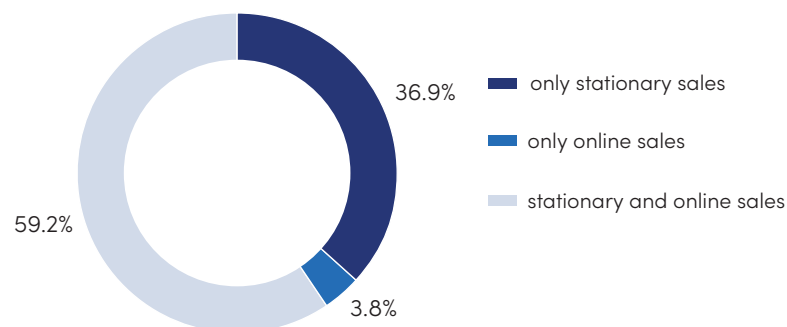
**Graphic 5.** Distribution of personal protective equipment manufacturers



Source: ASM, ITI survey

**The rapid development of new technologies and the change of purchasing processes force suppliers to develop sales channels. In total, 59.2% of the surveyed suppliers declared that they employ both stationary and online sales. However, more than every third supplier uses only stationary sales channels. The share of traditional sales will decrease over the years. In fact, suppliers in their plans take into account the development of different sales platforms, thereby planning innovation in the field of distribution strategy.**

**Figure 23.** Personal protective equipment distribution channels used by their suppliers (N = 130)



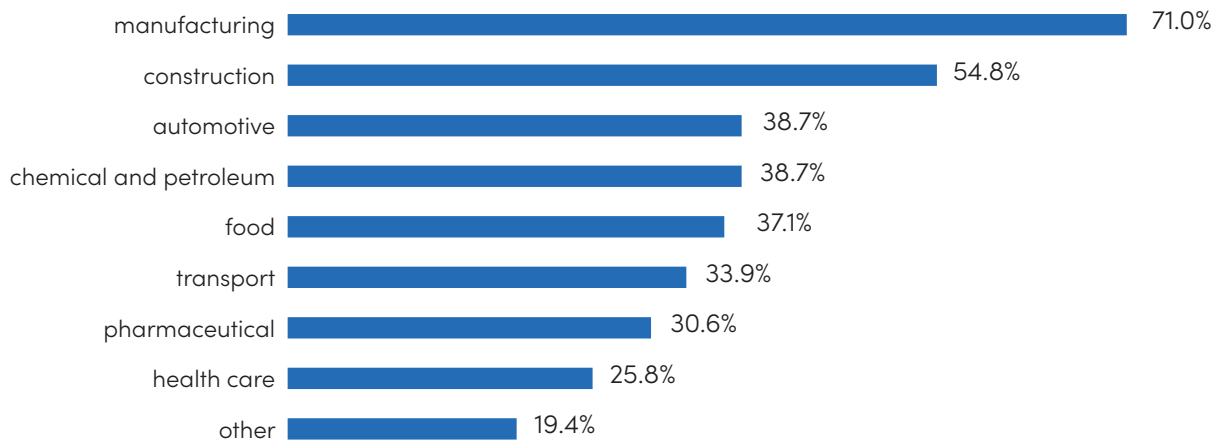
Source: ASM, CATI survey

The development of online sales is all the more important because the vast majority of recipients are making purchases online. A total of 64.7% of the PPE recipients combine offline purchases with online purchases, and 11.8% make only online purchases (N = 51).

## Collective protective equipment

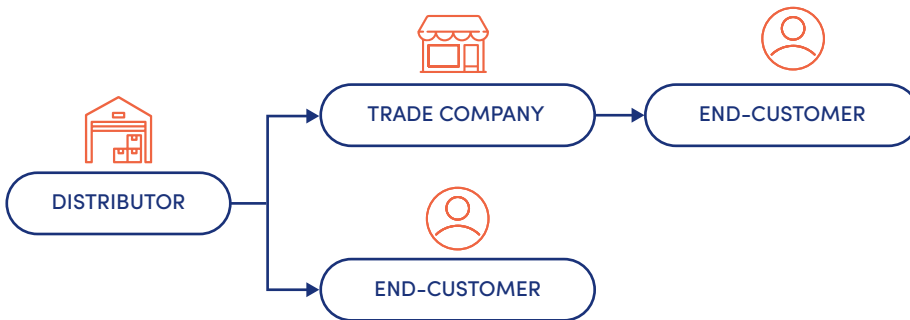
The surveyed suppliers diversify their CPE sales to different sectors. The main recipients of CPE are mainly the manufacturing and construction sectors. A total of 38.7% of suppliers supply CPE to the automotive, chemical and petroleum sectors. Among the responses 'other', a broadly defined service sector has emerged.

**Figure 24.** Sectors to which the collective protective equipment suppliers direct their offering (N = 62)



Source: ASM, CATI survey

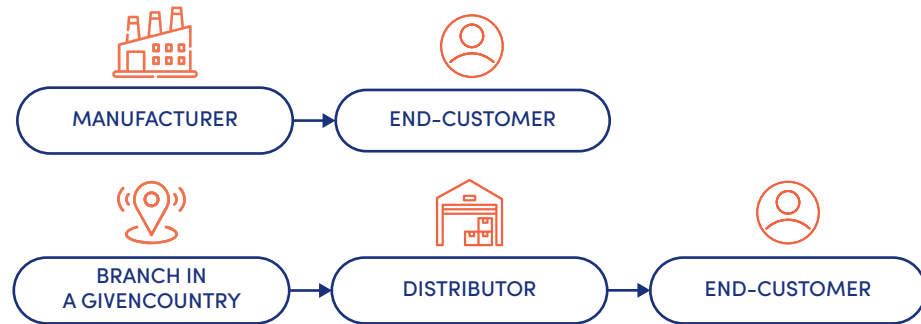
**Graphic 6.** Distribution of the collective protective equipment distributors



Source: ASM, ITI survey

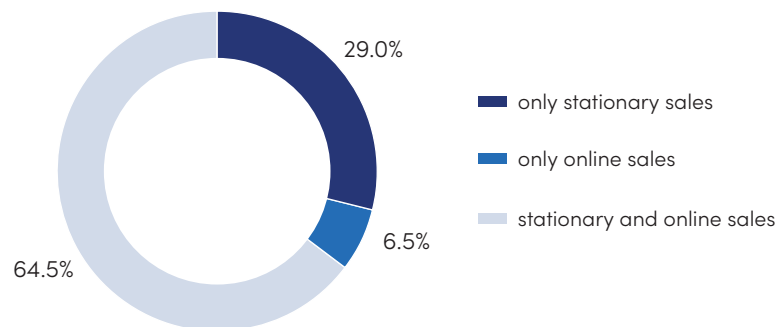
The distribution of CPE manufacturers is identical to that of PPE manufacturers.



**Graphic 7.** Distribution of the collective protective equipment manufacturers

Source: ASM, ITI survey

The change of purchasing processes forces suppliers to develop sales channels. In total, 64.5% of the surveyed CPE suppliers declared that they employ both stationary and online sales. Only 29.0% of suppliers use only traditional sales channels as part of the distribution strategy.

**Figure 25.** Collective protective equipment distribution channels used by their CPE suppliers (N = 62)

Source: ASM, CATI survey

In what concerns CPE purchases, the recipients are accustomed to traditional purchases. In total, 44.4% of the surveyed recipients use this channel only. Every other CPE recipient combines offline purchases with online purchases, and only 5.6% make online purchases (N = 18).

# Summary and conclusions



## PPE and CPE are necessary to ensure that employees are safe during their work.

Therefore, the demand for selected protective equipment is mainly influenced by the type of work performed and the risks with which it is associated. Factors such as better technical support and increased awareness of the price/performance ratio of products are expected to encourage the production of own-brand products. The increasing contractual production of PPE designed according to the specifications of distributors, mainly in the developed economies of North America and Western Europe, has a significant impact on the increased demand for products.

In the case of protective clothing, end-users consider several factors when purchasing, such as the material used and the coating it has, the barrier properties of the seams and other features such as fastenings. Continuous innovation, such as the development of lighter and convenient industrial protection equipment using high-quality fabrics, is expected to have a positive impact on the growth of the market.

Demand for protective equipment that combines safety with better aesthetics and technological innovations can contribute to market growth.

The market of textiles for the production of protective clothing is changing dynamically, there is an increasing number of innovative solutions, and companies are increasingly open to benefiting from technological innovations.

Protective clothing should be light, convenient, safe and compliant with the current standards. In particular, they must (which is important for specialist clothing), be tailored to the specific expectations of the recipient and examined in detail in this respect. Entry into the market of such a range as, for example, textile fabrics used for the production of inflammable overalls, is preceded by numerous laboratory tests and performance tests.

The development of innovation on the market is partly determined by ecological requirements. For example, millions of gloves reach the landfill every year. In response, new companies have emerged who have introduced biodegradable, disposable nitrile gloves. Manufacturers of PPE may, apart from switching to biodegradable materials, also reduce their energy footprint by designing new machinery and modifying existing machinery in order to reduce their energy demand.

The analysis of the information collected during the market survey of the selected PPE and CPE allowed for the preparation of the following conclusions/recommendations:

- Further efforts are needed to increase the awareness of people involved in ensuring the safety of workers – the use of personal protective equipment should not only be a legal requirement;
- the use of good gloves and higher-quality safety footwear translates into long-term savings and better protection of workers;
- it is essential to properly train OSH specialists and to disseminate knowledge in the medical environment on the role played by CPE and PPE;
- greater advice on the selection of PPE and CPE in the workplace should be encouraged and promoted;
- the selection of PPE should be targeted at the individual needs of the recipients – safety gloves or footwear should be selected for specific hazards;
- regular training on the use and selection of OSH products at end-user level is recommended; it is good practice for suppliers to organise this type of training at their regular recipients;
- the employers should be made aware that the selection of PPE and CPE should be made by an OSH specialist who has the necessary knowledge;
- it is worth placing more emphasis in marketing activities on the promotion of new innovative solutions for PPE and CPE, since consumers, when asked about innovative products on the market, often indicate that they are not familiar with such products;
- from the point of view of manufacturers, it is necessary to invest in research and development activities;
- the new legislation should be amended swiftly as new technologies emerge (e.g. the conversion of traditional welding into laser welding, in which case there are still insufficient provisions for CPE);
- suppliers should invest in online sales platforms because the online sales channel is most frequently selected by the recipients of PPE and CPE;
- cooperation on the PPE and CPE market should include manufacturers, scientific and research units, market surveillance authorities and OSH services.

Information on

- environmental factors affecting the behaviour of suppliers and recipients,
- market entry barriers and key elements of the supply chain,
- market innovation potential,
- market price factors,
- factors affecting the demand for selected PPE and CPE,
- export and import,
- the current and future market situation,

see the document entitled

***'Personal and collective protective equipment market 2022. Supplement to the Report'***, available at a charge

Details concerning the purchase of the supplement and the free electronic version of the publication ***'Personal and collective protective equipment market 2022. Report'*** is available at

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The material was prepared on the basis of a market survey of the suppliers and recipients of selected personal and collective protective equipment carried out by ASM – Centrum Badań i Analiz Rynku Sp. z o.o. at the request of the Central Institute for Labour Protection – National Research Institute.



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