

Management of occupational safety and health in the commissioning of defective work equipment in the manufacturing industry

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Abstract. Work equipment must provide compliance with the essential safety and health requirements applicable from the design and manufacturing stage to ensure a high level of protection of social interests, safety and health at work, and environmental protection. Non-conformities are discovered during the initial commissioning of work equipment in some circumstances due to incorrect design and/or manufacture, resulting in unsafe and non-compliant equipment that is defective when placed on the market and marketed. The purpose of this article is to present the research findings. The goal was to assess the risks associated with the security aspects of digital paper and cardboard printing machinery, to ensure compliance with current safety and health regulations, and to limit the risk of operating defective products. The study offered research results on the establishment of safety and compliance conditions, in order to design a methodology for assessment and technical inspection of work equipment, based on risk assessment and taking into account the usual and anticipated use of the work equipment. Introduction on the market, to improve the efficiency of technical inspection and market surveillance operations by detecting and generating risk profiles for work equipment manufacturer non-conformity.

1 Introduction

Ensuring the safety of workers is achieved from the design and manufacture of machinery, both by intrinsic design and by complementary and tertiary protection measures.

A basic tool for ensuring the safety of workers when using machinery is related to the safety and health instructions contained in the Technical Books of the machinery.

To this end, to ensure the presumption of conformity with the provisions of the Machinery Directive 2006/42 / EC, the machinery instructions must comply with the relevant requirements and ensure the safety of workers under specific conditions for commissioning, use, cleaning, maintenance and periodic inspection of the machinery.

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The prevention of work accidents due to the use of the machinery has as its main objective the safety in the use of the machinery by observing the instructions provided in the Technical Book of the machinery and the technical training of the workers.

The high number of non-conformities found on machinery put into service and put into service is frequently due to non-compliant technical documentation drawn up by the manufacturer or, as the case may be, the distributor of the machinery.

Given this situation, it is considered necessary to develop specific tools for conformity assessment, technical diagnosis and certification of machinery.

The research study identified the specific requirements for the development of safe tools, to comply with machinery instructions and to ensure the safety and health of workers.

Information on the use, adjustment and maintenance of the machinery without endangering persons, when these operations are carried out under the conditions prescribed by the manufacturer, but also taking into account any misuse that can be expected predictably, guarantees the prevention of accidents at work and occupational diseases at work.

In the same sense, it was found at the first commissioning of a machinery, which falls into the category of work equipment, non-conformities caused by improper design and/or manufacture, which causes non-conformity and insecurity in use, the equipment being defective in introduction and sale, on market.

The research study analysed the risks related to the security characteristics of the digital paper and cardboard printing machinery with technical and safe, safety conditions to use safely and reduce the risks of commissioning defective products.

Based on the risk assessment according to the methodology provided by Directive 2006 /42 / EC in the normal and foreseeable use of work equipment, the research study aimed to develop a methodology for assessment and technical inspection of work equipment found defective when placed on the market.

The need to ensure compliance with the essential health and safety requirements set out in Annex 1 of the Machinery Directive 2006/42 / EC, in conjunction with the technical and safety conditions requiring the guarantee of the minimum safety and health requirements of Directive 2009/104 / EC, determined in the research study the focus, mainly, on the analysis performed to identify the technical and security measures necessary to be adopted to increase the compliance rate in the use of digital paper and cardboard printing machinery.

The results of the research on establishing security and compliance conditions, to streamline the technical inspection of the digital paper and cardboard printing machinery in use and market surveillance actions require the identification and creation of risk profiles in terms of non-compliance of the equipment manufacturer. to initiate safeguard actions by the national authorities regarding the non-compliant machinery introduced on the Romanian territory.

There is no research on the security implications for workers in national economy activities involving the use of digital paper and cardboard printing machinery.

The methods used are:

- identification of professional risks applicable to digital paper and cardboard printing machinery, which fall into the category of work equipment and which is the object of the study analysis;
- establishing the essential safety and health requirements applicable to digital paper and cardboard printing machinery, according to the legal provisions established in Annex no. 1 of GD no. 1029/2008, which adopts the Machinery Directive 2006/42 / EC (machinery design directive);
- establishing the technical and security methods necessary for the conformity assessment, and the technical inspection of the digital paper and cardboard printing machinery,

according to the legal provisions established in Annex no. 1 of GD no. 114/2006 establishing the technical and safety methods necessary for conformity assessment, technical inspection of digital paper and cardboard printing machinery, according to the legal provisions established in Annex no. 1 of GD no. 1146/2006, which adopts Directive 2009/104 / EC work equipment);

- establishing the safety and health requirements applicable to digital paper and cardboard printing machinery, according to the legal provisions established by the specific security standards.

- establishing a methodology for evaluation and technical inspection of work equipment found defective when placed on the market.

2 Aspects relating to the technical inspection and compliance assessment of the digital paper and cardboard printing machinery that the user will use

Because the requirements related to conformity assessment are provided by regulations specific techniques for the machinery and have as their object the conformation of the machinery from the design and manufacture phase before placing it on the market, the assessment of the risks generated by machinery, which fall into the category of work equipment, is not performed by assessing the risks at the level of the work system (performer - workload - means of production - work environment).

At the level of enterprise management, specific control instruments are used to manage professional hazards when employing work equipment.

However, there are frequent situations in which it is found at the commissioning of the machinery that it has non-conformities that require redesign or, as the case may be, compliance with withdrawal from the market. To this end, tools and technical measures are needed to assess the conformity and technical inspection of the digital paper and cardboard printing machinery, to manage the professional risk management of work equipment used by workers, which requires designers and manufacturers to ensure the conditions necessary for the placing on the market of safe products with an adequate level of security, under the conditions of intended use and according to the destination established by the user, as employer.

3 Technical and safety requirements specific to digital paper and cardboard printing machinery and conformity assessment results

The research study consisted in establishing the safety and health requirements applicable to digital paper and cardboard printing machinery under the conditions provided by the Romanian legislation harmonized with the provisions of the European Directives on machinery 2006/42 / EC and 2009/104 / EC on the use of work equipment.

The examination and evaluation of the work equipment purchased/purchased by a company, as an employer, for use in Romania, was performed to verify the extent to which the conditions for the first commissioning of the machinery are met, in terms of compliance with regulations applicable legislation and techniques in force on the date of delivery by the manufacturer.

The digital paper and cardboard printing machinery that is the subject of the study is a set of machinery consisting of the digital machinery itself, a UV drying oven and a vacuum cleaner.

The examinations and safety tests/verifications and determinations were performed on the work equipment defined as a set of machinery, according to art. 3, paragraph (2), point 1, letter a) corroborated with letter d) of GD no. 1029 / 2008 on the conditions for placing machinery on the market (art. 1 (a), the first indent in conjunction with the fourth indent of Directive 2006/42 / EC), in whose category the work equipment subject to conformity assessment falls and technical inspection performed by the ICSM-CS Certification Body within INCDPM „Alexandru Darabont” Bucharest.

At the date of the examinations and tests/verifications/determinations of safety performed by the experts of the Certification Body and of the Laboratory of Electrical and Mechanical Risks, the Laboratory of Chemical and Biological Risks and respectively of the Laboratory of Noise and Vibration Control within INCDPM „Alexandru Darabont” Bucharest the work was out of order.

The machinery could not be put into operation, to be used by the buyer, its reception not being made as a result of the non-completion of the first commissioning by the manufacturer's technician.

In this sense, the buyer, as an employer, requested the realization by INCDPM „Alexandru Darabont” Bucharest of a research study to identify the state of compliance of the machinery and the measures to be taken in order to comply with the provisions of the Machinery Directive 2006/42/EC, adopted in the Romanian legislation by GD no. 1029/2008.

The technical inspection has been carried out in accordance with the following legislative and technical regulations, harmonized with the provisions of the European Directives in force at the time of delivery of the machinery by the manufacturer [1 - 13]

References to harmonized European standards were mentioned in the research study conducted considering that the work equipment is manufactured by the manufacturer in the European Union, in this sense the digital paper and cardboard printing machinery is subject to the provisions of European Directives and standards, harmonized.

In the first stage of the research study, the essential safety and health requirements applicable to paper and cardboard printing machinery were identified, in relation to the provisions of the Machinery Directive 2006/42/EC [3-5], of GD no.1029/2008 [2], application guidelines [6, 7] and applicable European standards [8-10, 13], based on the risk analysis performed by INCDPM experts „Alexandru Darabont” Bucharest.

In order to verify the fulfilment of the conditions regarding the commissioning of the machinery in terms of compliance with the provisions of legislative and technical regulations applicable to work equipment, which falls into the category of machinery, in force the date of delivery by the manufacturer were taken into account in examinations, evaluations and safety checks performed during the technical inspection procedure of the machinery and the technical documentation provided by the buyer, submitted by the manufacturer of the machinery assembly, consisting of the Manual for use and maintenance of the digital machinery, wiring diagrams, operating instructions for the oven UV drying, part of the machinery assembly, and the use and maintenance manual of the vacuum cleaner, part of the machinery assembly, and a user guide for the digital printing machinery software.

During the evaluation it was found that at the date of mounting the work equipment in the location where it was to be used, the UV drying oven, which was part of the machinery, was not delivered with information on commissioning, use, maintenance, as part of the component, of the machinery, and the declaration of incorporation respectively.

It was also found that the CE declaration of conformity was drafted by the manufacturer before the completion of the machinery and refers only to the digital printing machinery and not to the whole set of machinery, and the CE conformity marking is applied only to

the digital machinery component, to be printed from the machinery assembly, not certifying the conformity of the entire work equipment.

It was found at the time of the research study through technical inspections, examinations and verifications that the work equipment was not put into operation, as a result of leaving in custody by the manufacturer's representatives, the legal requirements provided by Directive 2009/104/EC, art.4, paragraph (1), letter a), par.1) and of art.5, paragraph (1) / GD no.1146/2006, art.4, paragraph (1), letter a), par.1) and of art. 5, paragraph (1) not being fulfilled as a result of the impossibility of achieving this objective by the producer.

According to the provisions of the Machinery Directive 2006/42/EC, art. 5, paragraph (1) GD no. 1029/2008, art. 6, (1) the machinery manufacturer must ensure that the machinery meets the essential health and safety requirements applicable to it, provided in Annex no. 1 of the Directive; provide, in particular, the necessary information, such as instructions; to draw up the EC declaration of conformity, according to the provisions of Annex no. 2 lit. Point 1 of the directive and to ensure that it accompanies the machinery and to apply the CE marking following the provisions of art. 16 of the directive.

Taking into account the provisions of art.6, paragraph (1), letter c), paragraph (2) and (3) and art.7, paragraph (1) of GD no.1029 / 2008 / art.5, point 1, point (c), point 2, point 3 and point 4 of Directive 2006/42 / EC on the placing on the market and putting into service, the manufacturer of the set of machinery had to provide, in particular, the necessary information, such as would be the instructions to accompany the machinery defined as a whole, according to point 7 of art. 3, paragraph (1) of GD no. 1029/2008.

In the study it was found that the manufacturer sent a short brochure (guidelines) of the software to a similar equipment, but which refers to the printing of ceramic tiles, use and maintenance manuals prepared also referring to machinery to print ceramic tiles.

From the evaluation of the documents provided, it was found that the use and maintenance manual prepared by the manufacturer and sent to the buyer of the work equipment, contains general information regarding a part of the machinery defined as a whole, according to point 7 of art.3, paragraph (1) of GD no. 1029/2008, respectively the information refers only to the use and maintenance manual of the printing machinery not containing information regarding the operation of the machinery assembly, considering the existence of a monitor / control panel of the printing machinery that ensures the interoperability of the whole assembly. consisting of printing machinery, UV drying oven and vacuum cleaner.

The conformity assessment procedure performed on the work equipment does not result in additional information regarding the commissioning, use, maintenance / service or service related to the machinery components defined as a whole, respectively there is no information regarding use and maintenance instructions. to the components of UV drying oven and vacuum cleaner.

The information contained in the use of the printing machinery software, as part of the assembly, referred to a program of use for printing ceramic products and was not designed and developed for the purpose of using the machinery for the purpose requested by the buyer.

It was found in the study that the information contained in the user guide of the printing machinery software, as a component part of the work equipment assembly, refers to operating orders for a ceramic tile firing furnace and printing of different ceramic tiles, the destination requested by the beneficiary, respectively the printing of paper or cardboard, respectively that the operating menu was not designed and made for the operation of the machinery according to the established destination.

The information contained in the Use and Maintenance Manual of the printing machinery, as part of the work equipment assembly, presents general information about the

machinery and does not refer to the exact name of the machinery, not indicating the type and series of the machinery, as well as its characteristics, respectively does not present a general description of the machinery, a description of the workstation (s) likely to be occupied by the operator, as well as a description of the normal use of the machinery, being indicated in the contents of the manual warnings without being detailed instructions for installation and commissioning of the machinery defined as a whole.

It was found from the examination of the machinery, during the operation of the orders, that the control / operation system provides menu information for operating other categories of machinery and does not refer to the machinery introduced in Romania, for the destination requested by the beneficiary related to printing paper and cardboard.

Following the safety examination and checks performed on the machinery defined as a whole, it was found that during the actuation of the commands, the control / operation system provides menu information that may not be understood by the machinery operators, the information being unclear, which may not be understood, by the machinery operators, considering the content in English.

Following the security checks performed, it was found that the printheads mounted on the colour bars are manufactured and intended for use in other categories of machinery for printing ceramic tiles and do not refer to the machinery for printing sheets of paper and cardboard.

The information contained in the use and maintenance manual of the printing press does not present information regarding the risks for persons exposed to physical emissions (noise / vibration), the installation and assembly intended to reduce noise and vibration, respectively the instructions for use machinery defined as a whole and, where appropriate, the instructions relating to the training of operators.

The test report issued by the Noise and Vibration Combat Laboratory within INCDPM "Alexandru Darabont" Bucharest records the results of determining the sound pressure levels for the machinery defined as a whole, respectively "Test results are NOT considered appropriate." The measured values exceeding the pressure level values. A-weighted equivalent continuous sound system, at workstations, which must not exceed 70 dB (A), in order to guarantee the provisions of point 7.7.4.2, letter (u) of Annex I of Directive 2006/42 / EC / pt.1.7.4.2, li. (u) of Annex no.1 of GD no.1029/2008.

The research study found that the level of airborne noise emission, respectively at the level of sound pressure is not declared by the machinery manufacturer, in accordance with the provisions of the harmonized standard SR EN ISO 4871: 2010 and the Machinery Directive 2006/42 / EC, after verification at a speed of 30m / min and a suction of 60% in the simulated printing of the cardboard, the recorded values being between 79 ÷ 85dB (A), in the conditions in which no noise measurements could be performed on the machinery in operating conditions at capacity maximum, because the machinery stopped working.

It was found that the machinery is not provided with warning signs for wearing personal hearing protection equipment.

The manufacturer of the machinery defined as a whole had to draw up and make available to the beneficiary of the machinery the installation instructions which must take into account all risks arising from the interface with the other parts of the machinery defined as a whole, in order to comply with letter (u) of Annex I of Directive 2006/42 / EC / point 1.7.4.2, letter (u) of Annex no. 1 of GD no. 1029/2008 regarding noise.

The research study also required the evaluation of the information contained in the use and maintenance manual of the work equipment regarding the non-ionizing radiation emissions that may endanger people, the information regarding the radiation emitted for the operator and for the persons exposed by the machinery defined as ensemble.

In accordance with the provisions of point 1.5.13 of chapter 1 of Annex no.1 of MD 2006/42 / EC / point 1.5.13 of chapter 1 of Annex no.1 of GD no.1029 / 2008, each

machinery must be designed and constructed in such a way as to avoid the risks of inhalation, ingestion, contact with skin, eyes and mucous membranes and subcutaneous penetration of hazardous materials and substances, during examinations and verifications carried out finding that the information in the user manual and maintenance of the printing machinery and the UV drying oven do not contain information of dangerous substances.

Following the safety examination and checks performed on the machinery defined as a whole, losses of hazardous material, respectively ink residues were found.

The safety data sheets for hazardous substances (inks, varnish) used by the machinery were prepared and submitted by the manufacturer of the printing machinery, during the evaluation finding that the machinery manufacturer is not the manufacturer of these substances (inks, varnish), and the safety data sheets presented do not contain all the information necessary for the risk assessment regarding material emissions and hazardous substances, according to point 1.5.13 of chapter 1 of Annex no.1 of MD 2006/42 / EC / point.1.15.13 of chapter 1 of Annex no.1 of GD no.1029 / 2008.

During the technical inspection and safety checks, new defects were found in the machinery left in custody with the buyer by the manufacturer, which attests to the condition of the machinery, as a result of its non-commissioning.

The conditions and verifications for ozone in tunnels / UV dryers integrated in printing and varnishing machinery were taken into account in the examination and safety checks performed on the machinery defined as a whole, in accordance with the provisions of the harmonized standard SR EN 1010-2 + A1 : 2011 being established conditions for UV dryers, respectively at point 5.6.3 Drying tunnels and Annex to SR EN 1010-2 + A1: 2011 which provides the requirements and methods for measuring ozone emissions and determined by the substances in inks and varnishes - point A, 1,2-Ozone, point A.2-Ink emission and varnish emission, point A.5 Volatile isopropyl alcohol compounds (VOC-IPA) and volatile hydrocarbon compounds (cleaning solutions / solvents).

Safety checks were performed on the level of ozone emission and flammable substances (inks) on the machinery defined as a whole and it was found that the level of ozone emissions exceeds the permissible values provided in the Annex to SR EN 1010-2 + A1: 2011.

The test report issued by the Chemical and Biological Risks Laboratory within INCDPM "Alexandru Darabont" Bucharest records the results of the ozone emission determinations on the machinery defined as a whole for 15 minutes, provided in Annex no. 1 of GD no. 1218/2006, completed and amended by GD no. 584/2018, the verifications being performed in „empty” operation mode.

The determined value is $0.20 \text{ mg} / \text{m}^3$, a value that does not fall within the permissible value according to the Annex to the harmonized standard SR EN 1010-2 + A1: 2011, point A.1.2 Ozone for which the measured values must record values of maximum $0.05 \text{ mg} / \text{m}^3$ ozone.

The research study highlighted that the information contained in the use and maintenance manual of the printing machinery does not refer to the emission of flammable substances from inks containing solvents, respectively the information on radiation emitted to the operator and exposed persons, according with the provisions of the harmonized standard SR EN 1010-2 + A1: 2011, point 7 - Information for use.

Regarding the electrical equipment of the machinery assembly, it was found that the information contained in the use and maintenance manual does not refer to the plans, diagrams, descriptions and explanations necessary for use, maintenance and repair of the machinery defined as a whole, respectively UV drying oven component, including to verify its correct operation.

The information contained in the use and maintenance manual does not refer to the information related to the residual risks that remain despite the application of safety

integration measures in the design of the machinery and whether complementary protection and prevention measures have been adopted [14, 15].

The test report issued by the Electrical and Mechanical Risks Laboratory within INCDPM “Alexandru Darabont” Bucharest records the results of the machinery checks defined as a whole, according to the provisions according to SR EN 1010-1 + A1: 2011, SR EN 1010-2 + A1: 2011, SR EN 60204-1: 2007 / AC: 2013, SR EN 60204-1: 2019, SR EN 60529: 1995 and Order no. 2,741 of November 1, 2011 on the approval of the technical regulation „Norm for the design, execution and operation of electrical installations related to buildings”, indicative I 7-2011, issued by the Ministry of Regional Development and Tourism, published in the Official Journal no. 802 of 14.11.2011.

Following the safety examination and verifications performed regarding the machinery defined as a whole, non-conformities were found regarding the technical documentation and the assembly of machines and its components registered in the conclusions of the research study. The statistics of registered non-conformities are presented in figure 1.

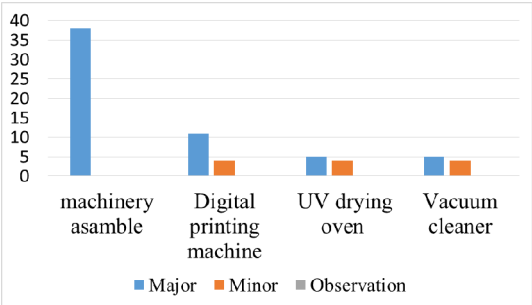


Fig. 1. Statistics of non-conformities registered at the machinery assembly and machinery components.

Following the safety examination and verifications performed regarding the machinery defined as a whole, non-conformities of the electrical equipment of the machinery defined as a whole were found, registered in the conclusions of the research study, presented in table 1 [14, 15].

Table 1 - Non-conformities identified in the electrical equipment of the machinery assembly

No. crt.	Safety requirement	Nonconformity	Non-conformity type
1	Protection against electric shock by direct contact	Machinery UPS voltage terminals (uninsulated/no housing)	Major
2		Condensation collector (plastic can) located next to the 230/24 V low voltage transformer	Major
		The housing of the electrical panel/cabinet does not ensure the degree of protection IP 55, declared. An orifice (hole size 8.8 mm) has been identified in the electrical panel housing in the area of the On / Off control button	Major
3	Additional measure to protect against electric shock by indirect contact	It was not identified in the use and maintenance manual of the printing machinery and in the electrical diagram Not identified on the Digital printing machinery	Major

4	Protection circuits	Protective circuits provided with a „fork” type terminal	Major
5	Earthing terminals	Two protective conductors connected to a single earthing terminal	Major
6	Separation of circuits operating at different voltages	Circuits that operate at different voltages are not separated	Major
7	Marking I/O control devices and indicators/light signals	I / O controls and indicators/light signals unmarked or marked in a different language than user's language	Major
8	Interoperability	When operating the UV drying oven emergency stop devices are pressed, it was found that the digital printing machinery belt continued to operate.	Major
9	Markings	Markings are not durable	Minor
10	Information displayed by the digital printing machinery control panel	Information displayed on the digital printing machinery control panel are displayed in English, Italian and Romanian	Major

Figure 2 displays the statistics of the non-conformities reported at the electrical equipment of the machinery assembly and on the machinery parts.

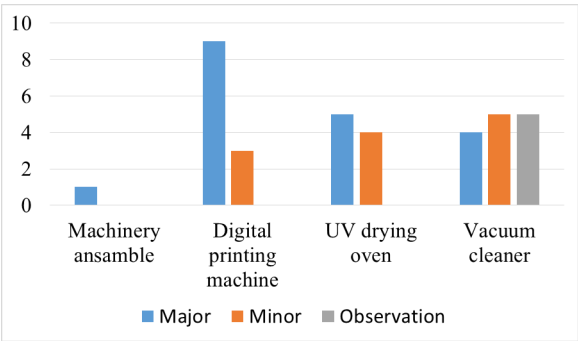


Fig. 2. Statistics of non-conformities registered with the electrical equipment of the machinery assembly and the car components.

4 The stage of compliance of digital paper and cardboard printing machinery to be placed on the market

The final results of the safety examinations and checks performed on the machinery defined as a whole delivered by the manufacturer are found in the research study and the final inspection report, accompanied by the verification reports on compliance with the essential safety and health requirements applicable to the machinery. Annexe no.1, chap. 1 of MD 2006/42 / CE / Annex no.1, chapter 1 of GD no.1029 / 2008 and the harmonized European standards applicable and assimilated, given attesting how the presumption of conformity with the provisions of the Machinery Directive 2006 / 42 / CE.

The machinery that was the object of the research study and the technical inspection and security checks falls within the criteria that define a set of machinery, as follows:

- The constituent units of the machinery defined as a whole are assembled together to fulfil a common function, namely the production of a certain product - printed paper / cardboard;

- The constituent units of the machinery defined as an assembly are functionally connected in such a way that the operation of the printing unit directly affects the operation of other units - Respectively UV drying oven and vacuum cleaner or the assembly as a whole;
- The constituent units of the machinery defined as a whole have a common control system, which is located at the main machinery - digital printing machinery.

The research study found that the work equipment defined as a set of machinery cannot be received by the user, due to major non-conformities, which have as an effect the impossibility of putting the machinery into operation and guaranteeing the safety and health of workers /operators.

Following the safety examinations and verifications performed during the study, it was found that the work equipment cannot be put into operation and used in the state of affairs, in accordance with the provisions of Law no. 319/2006 on safety and health at work, which adopts the provisions In the framework of Framework Directive 89/391 / EEC, work equipment must be put into safe use for the safety and health of workers.

The research study led to the need to develop a methodology for evaluation and technical inspection of work equipment found defective when placed on the market, as a result of examinations, evaluations and safety checks performed during the technical inspection procedure of the machinery and technical documentation disposition by the beneficiary, as employer.

The methodology of evaluation and technical inspection of work equipment found defective when placed on the market also takes into account the conditions necessary to perform conformity assessment and technical inspection of machinery assemblies, which must meet in part and in general the essential safety and health requirements provided in Directive 2006/42 / EC and harmonized European standards.

In order to ensure safe and healthy working conditions and working and social environments, it was necessary to develop tools that incorporate principles and guidelines relevant to occupational safety and health regarding occupational risk management, respectively conformity assessment, technical inspection and compliance of digital paper and cardboard printing machinery [16].

5 Conclusions

Digital paper and cardboard printing machinery are subject to conformity assessment procedures established by the Machinery Directive 2006/42/EC and must guarantee compliance with the applicable essential safety and health requirements and ensure the presumption of conformity with harmonized European standards.

Digital paper and cardboard printing machinery can be used, for example, independently if they do not perform other operations than printing and as a set of machinery, in this sense must be designed and manufactured so as to achieve and guarantee the interoperability of the equipment, defined as a set of machinery, since the constituent units of the set have a common control system, being functionally linked in such a way that the operation of the main printing unit directly affects the operation of other units or the set as whole.

The result of the research concluded the need to establish safety and compliance conditions, in order to put into operation for the first time a machinery in use and market surveillance actions that require the identification and creation of risk profiles in terms of non-compliance of the machinery manufacturer, aiming at the application of notification actions by the national authorities regarding the non-compliant machinery introduced on the Romanian territory, within the necessary safeguard measures.

The research results confirmed the need to adopt measures to control the introduction of work equipment in Romania as a result of the design and manufacture of machinery and

related software for destinations other than those established by the technical conditions established by the beneficiary, as well as the lack of information on commissioning, use, maintenance / service or service related to the components of the machinery, respectively of some machinery defined as a whole.

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