



Technical data and methods of the machinery: Machinery 02

Name:	Machinery 02
Product:	M. - Machinery
Model:	00
Serial:	00
Revision:	00 - 08/05/2021
Year of construction:	2021
Directive:	Dir. 2006/42/EC (EN)
Manufacturer:	Manufacturer
Intended use:	Intended purpose
Description:	

Technical Data and Methods

Certification Procedure

The machinery does not complies Annex IV
 1. Internal check for machinery production as Annex VIII.

CE Marking Process

Risk assessment

EN ISO 12100

Tool EN ISO 12100 | Operative

Safety of machinery - General principles for design - Risk assessment and risk reduction

1. State of the machine | Operating condition
2. Hazardous situation | Hazardous event
3. Initial risk evaluation
4. Inherently safe design measures | Safeguardings | Complementary protective measure
5. Information for use
6. Safety signs
7. Final risk evaluation
8. Residual risk
9. Technical standards applied | Notes
10. EHSR

ISO/TR 14121-2

Safety of machinery - Risk assessment - Part 2: Pratical guidance and examples of methods

The hybrid tool is described in section 6.5 of ISO/TR 14121-2.
 The hybrid tool combines two of the methods described in the ISO/TR 14121-2. They are usually risk charts (qualitative tool) combined with matrices or scoring systems (quantitative method). The risk factors to be taken into consideration are the same as the tree method (gravity, frequency, probability, and avoidability) and each of them contains different levels to which correspond to different numerical weights. The method is applied as follows:

1. to establish the numerical weights for the severity, the frequency, the probability and the avoidability of the damage (see below the tables with the relative numerical weights);
2. add the three frequency, probability, and avoidance weights to determine the probability class "Cl" (Class) ($Cl = Fr + Pr + Av$);
3. insert the Gravity and Class dimensions into a weighting matrix;
4. calculate the risk by finding the intersection point of the row (Cl) with the column (Se) of the matrix.



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Progetto EN ISO 12100	Machinery 02		Year: 2021
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Consequences / Severity (Se)	Class Cl (Fr+Pr+Av)					Frequency (Fr)	Probability (Pr)	Avoidance (Av)	
	4	5-7	8-10	11-13	14-15				
Death, losing an eye or arm	4	5-7	8-10	11-13	14-15	<= 1h	5 Very high	5	
Permanent, losing fingers	3	5-7	8-10	11-13	14-15	> 1h to <= 24h	5 Likely	4	
Reversible, medical attention	2	?	8-10	11-13	14-15	> 24 to <= 2w	4 Possible	3 Impossible	5
Reversible, first aid	1	?	8-10	11-13	14-15	> 2w to <= 1y	3 Rarely	2 Possible	3
						> 1y	2 Negligible	1 Likely	1

Technical Data and Methods

Project:

Machinery:

Progetto EN ISO 12100

Machinery 02

Year: 2021

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1 - Mechanical hazards

Hazard present

1.3 - Crushing

State of the machine | Operating condition

State of the machine | Operating condition

Hazardous situation | Hazardous event

Hazardous situation | Hazardous event

Initial risk evaluation

(Single operator)

ISO/TR 14121-2:2012 p. 6.5 Hybrid Tool

Se(3) | Fr(3) + Pr(2) + Av(3) = Cl(8): Safety measures required

Consequences / Severity (Se)	Class Cl (Fr+Pr+Av)					Frequency (Fr)	Probability (Pr)	Avoidance (Av)	
	4	5-7	8-10	11-13	14-15				
Death, losing an eye or arm	4	5	6	7	8	<= 1h	5 Very high	5	
Permanent, losing fingers	3	4	5	6	7	> 1h to <= 24h	5 Likely	4	
Reversible, medical attention	2	3	4	5	6	> 24 to <= 2w	4 Possible	3 Impossible	5
Reversible, first aid	1	2	3	4	5	> 2w to <= 1y	3 Rarely	2 Possibile	3
						> 1y	2 Negligible	1 Likely	1

Inherently safe design measures | Safeguardings | Complementary protective measures

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Information for use

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Safety signs



5.24

Warning; Crushing of hands

Final risk evaluation

(Single operator)

ISO/TR 14121-2:2012 p. 6.5 Hybrid Tool

Se(3) | Fr(2) + Pr(1) + Av(1) = Cl(4): OK

Consequences / Severity (Se)	Class Cl (Fr+Pr+Av)					Frequency (Fr)	Probability (Pr)	Avoidance (Av)	
	4	5-7	8-10	11-13	14-15				
Death, losing an eye or arm	4	5	6	7	8	<= 1h	5 Very high	5	
Permanent, losing fingers	3	4	5	6	7	> 1h to <= 24h	5 Likely	4	
Reversible, medical attention	2	3	4	5	6	> 24 to <= 2w	4 Possible	3 Impossible	5
Reversible, first aid	1	2	3	4	5	> 2w to <= 1y	3 Rarely	2 Possibile	3
						> 1y	2 Negligible	1 Likely	1

Residual risk

Residual risk

Technical standards applied | Notes

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EHSR

1.1.1 - Definitions

1.1.2 - Principles of safety integration

1.1.3 - Materials and products

Card date: 08/05/2021 - R.A.: HZA-001

Reduction: 8/3 4/3

Comply

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1.3 - Crushing (HZA-001)