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English version

## Machines for surface cleaning and pre-treatment of industrial items using liquids or vapours - Part 1: Common safety requirements

Machines de nettoyage et de pré-traitement de pièces industrielles utilisant des liquides ou des vapeurs - Partie 1 : Prescriptions générales de sécurité

Maschinen zur Oberflächenreinigung und -vorbehandlung von industriellen Produkten mittels Flüssigkeiten oder Dampfphasen - Teil 1: Allgemeine Sicherheitsanforderungen

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

## Contents

page

Foreword.....	4
Introduction .....	5
1 Scope .....	5
2 Normative references .....	7
3 Terms and definitions .....	9
4 List of significant hazards .....	12
4.1 General.....	12
4.2 Mechanical hazards .....	13
4.3 Electrical hazards .....	14
4.4 Thermal hazards .....	14
4.5 Hazards generated by noise .....	14
4.6 Hazards generated by materials and substances processed, used or emitted by the cleaning machine.....	14
4.7 Hazards combinations .....	16
4.8 Hazards caused by failure of energy supply .....	16
4.9 Hazards related to failure of control systems.....	16
5 Safety requirements and/or measures .....	16
5.1 General.....	16
5.2 Safety requirements and measures against mechanical hazards.....	16
5.3 Safety requirements and measures against electrical hazards.....	21
5.4 Safety requirements and measures against thermal hazards .....	22
5.5 Safety requirements and measures against noise.....	24
5.6 Safety requirements and measures against hazards generated by materials and substances processed, used or emitted by the cleaning machine .....	24
5.7 Safety requirements and measures against hazard combinations .....	27
5.8 Safety requirements and measures against failure of energy supply .....	27
5.9 Safety requirements and measures against failure of control systems .....	28
6 Verification of the safety requirements .....	29
6.1 General.....	29
6.2 Mechanical.....	30
6.3 Electrical .....	30
6.4 Thermal .....	30
6.5 Noise .....	31
6.6 Material and substances processed, used or emitted by the cleaning machines.....	31
6.7 Hazard combinations .....	32

<b>6.8</b>	<b>Failure of energy supply</b> .....	<b>32</b>
<b>6.9</b>	<b>Control systems</b> .....	<b>32</b>
<b>7</b>	<b>Information for use</b> .....	<b>32</b>
<b>7.1</b>	<b>General</b> .....	<b>32</b>
<b>7.2</b>	<b>Instruction handbook</b> .....	<b>32</b>
<b>7.3</b>	<b>Marking</b> .....	<b>35</b>
	<b>Annex A (informative) National references to exposure limit values</b> .....	<b>37</b>
	<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC</b> .....	<b>38</b>
	<b>Bibliography</b> .....	<b>39</b>

## **Foreword**

This document (prEN 12921-1:2004) has been prepared by Technical Committee CEN/TC 271 “Surface treatment equipment — Safety”, the secretariat of which is held by DIN.

This document is currently submitted to the Formal Vote.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

NOTE: Although a cleaning machine, as an integral whole, formally does not fall under the scope of the ATEX Directive 94/9/EC, the standard is based upon a fundamental risk analysis according to this directive.

## Introduction

This standard is a type C standard as stated in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

This document consists of the following parts:

- Part 1: Common safety requirements
- Part 2: Safety of machines using water based cleaning liquids
- Part 3: Safety of machines using flammable cleaning liquids
- Part 4: Safety of machines using halogenated solvents

## 1 Scope

**1.1** This standard applies to machines for surface cleaning and pre-treatment – in the following called "cleaning machines" – of industrial items using liquids or vapours, i. e. stationary machines and related equipment for automated and manual cleaning and pre-treatment processes.

**NOTE** Cleaning machines are operated with or without heating, for example as dipping or spraying or vapour condensation process, where additional using of ultrasound is possible. These cleaning machines could be designed as single-zone or multi-zone machine, chamber machines, drum cleaning machine, low lift truck machines, round time machines or tunnel (continuous) machines.

To the extent of this document, cleaning machines for industrial items are considered as an assembly of the following equipment:

- pump(s) and/or other mechanical system of agitation, recirculation and spraying of cleaning liquid;
- forced ventilation system;
- heating system with temperature control;
- condensation system;
- filtration and separation system and/or solid particles extraction from the liquid;
- conveyor and/or handling system for the items to be processed;
- product handling systems and reciprocators which are part of the cleaning machine;
- control and/or monitoring systems;
- liquid handling system.