

ISO 23062:2022-07 (E)

Foundry machinery - Safety requirements for molding and coremaking machinery and associated equipment

| Contents | | Page |
|--------------------|---|-------------|
| Foreword | | v |
| Introduction | | vi |
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms and definitions | 2 |
| 4 | Significant hazards and risk assessment | 6 |
| 4.1 | General | 6 |
| 4.2 | Interfaces to the linked/integrated equipment | 7 |
| 5 | Safety requirements and/or protective/risk reduction measures | 7 |
| 5.1 | General | 7 |
| 5.1.1 | Fixed guards | 7 |
| 5.1.2 | Movable guards | 7 |
| 5.1.3 | Electro-sensitive protective devices (ESPD) | 8 |
| 5.1.4 | Several persons at the same time being present at hazardous zones | 8 |
| 5.1.5 | Control systems | 8 |
| 5.1.6 | Electrical equipment | 9 |
| 5.1.7 | Safety-related control systems | 9 |
| 5.1.8 | Safety-related software and parameters | 9 |
| 5.1.9 | Remote access to the control systems | 10 |
| 5.1.10 | Two-hand control devices | 10 |
| 5.1.11 | Ergonomics | 10 |
| 5.1.12 | Noise | 11 |
| 5.1.13 | Vibrations | 12 |
| 5.1.14 | Surface temperatures and heat radiation | 12 |
| 5.1.15 | Safety signs and warning devices | 12 |
| 5.1.16 | Exhaust systems | 13 |
| 5.1.17 | Fire and explosion protection | 13 |
| 5.1.18 | Fluid systems | 13 |
| 5.1.19 | Mechanical stability | 13 |
| 5.2 | Significant hazards, hazardous situations, safety requirements and/or protective/ risk reduction measures | 13 |
| 5.3 | Significant hazards, hazardous situations, safety requirements and/or protective/ risk reduction measures: General requirements | 14 |
| 5.4 | Significant hazards, hazardous situations, safety requirements and/or protective/ risk reduction measures: Sand conditioning and reclamation equipment | 16 |
| 5.5 | Significant hazards, hazardous situations, safety requirements and/or protective/ risk reduction measures: Molding machinery and plants | 22 |
| 5.6 | Significant hazards, hazardous situations, safety requirements and/or protective/ risk reduction measures: Coremaking machinery and coremaking lines | 28 |
| 5.7 | Significant hazards, hazardous situations, safety requirements and/or protective/ risk reduction measures: Knock-out equipment | 31 |
| 6 | Verification of the safety requirements and/or preventative measures | 32 |
| 6.1 | General | 32 |
| 6.2 | Safety systems | 32 |

| | | |
|--|---|----|
| 6.3 | Electrical safety | 33 |
| 6.4 | Pressure release of dust and gas explosions | 33 |
| 6.5 | Explosiveness of dust or gaseous substances | 33 |
| 6.6 | Stress analysis | 33 |
| 6.7 | Airborne substances generated during operation | 33 |
| 6.8 | Noise | 33 |
| 6.9 | Verification in accordance with Vibration | 33 |
| 6.10 | Safety marking | 33 |
| 7 | Information for use | 33 |
| 7.1 | General | 33 |
| 7.2 | Warning devices and safety signs | 34 |
| 7.3 | Minimum marking | 34 |
| 7.4 | Accompanying documents | 34 |
| 7.4.1 | Instruction handbook | 34 |
| 7.4.2 | Operation manual | 34 |
| 7.4.3 | Maintenance manual | 36 |
| 7.5 | Training of personnel | 36 |
| 8 | Supplementary information regarding repair work | 36 |
| Annex A (normative) Preventing hazards from hydraulic and pneumatic equipment as well as electrically driven equipment | | 38 |
| Annex B (informative) Main components of hazardous gases, fumes and dusts during core and mold making | | 41 |
| Bibliography | | 43 |