

ISO 19085-2:2021-10 (E)

Woodworking machines - Safety - Part 2: Horizontal beam panel circular sawing machines

| Contents | | Page |
|--------------------|---|-------------|
| Foreword | | v |
| Introduction | | vi |
| 1 | Scope | 1 |
| 2 | Normative references | 3 |
| 3 | Terms and definitions | 3 |
| 4 | Safety requirements and measures for controls | 8 |
| 4.1 | Safety and reliability of control systems | 8 |
| 4.2 | Control devices | 8 |
| 4.3 | Start | 9 |
| 4.3.1 | Direct start | 9 |
| 4.3.2 | Start via control power-on | 9 |
| 4.3.3 | Operating conditions | 9 |
| 4.4 | Safe stops | 10 |
| 4.4.1 | General | 10 |
| 4.4.2 | Normal stop | 10 |
| 4.4.3 | Operational stop | 11 |
| 4.4.4 | Emergency stop | 11 |
| 4.5 | Braking function of tools | 11 |
| 4.6 | Mode selection | 11 |
| 4.7 | Tool speed changing | 11 |
| 4.7.1 | Speed changing by shifting the belts on the pulleys | 11 |
| 4.7.2 | Speed changing by incremental speed change motor | 11 |
| 4.7.3 | Infinitely variable speed by frequency inverter | 11 |
| 4.8 | Failure of any power supply | 11 |
| 4.9 | Manual reset control | 12 |
| 4.10 | Standstill detection and monitoring | 12 |
| 4.11 | Machine moving parts speed monitoring | 12 |
| 4.12 | Time delay | 12 |
| 4.13 | Teleservice | 12 |
| 5 | Safety requirements and measures for protection against mechanical hazards | 12 |
| 5.1 | Stability | 12 |
| 5.2 | Risk of break-up during operation | 12 |
| 5.3 | Tool and tool fixing design | 12 |
| 5.3.1 | General | 12 |
| 5.3.2 | Spindle locking | 12 |
| 5.3.3 | Circular saw blade fixing device | 12 |
| 5.3.4 | Flange dimension for circular saw blades | 13 |
| 5.4 | Braking | 13 |
| 5.4.1 | Braking of tools | 13 |
| 5.4.2 | Maximum run-down time | 13 |
| 5.4.3 | Brake release | 13 |
| 5.5 | Safeguards | 13 |
| 5.5.1 | Fixed guards | 13 |
| 5.5.2 | Interlocking movable guards | 13 |
| 5.5.3 | Hold-to-run control | 13 |

| | | |
|-----------------------|--|----|
| 5.5.4 | Two-hand control | 13 |
| 5.5.5 | Electro-sensitive protective equipment (ESPE) | 13 |
| 5.5.6 | Pressure-sensitive protective equipment (PSPE) | 13 |
| 5.5.7 | Enabling control | 14 |
| 5.6 | Prevention of access to hazardous moving parts | 14 |
| 5.6.1 | Safeguarding the saw blades outside the cutting area | 14 |
| 5.6.2 | Safeguarding the saw blades in the cutting area | 14 |
| 5.6.3 | Safeguarding the moving parts at the front cutting line | 15 |
| 5.6.4 | Safeguarding the pressure beam | 17 |
| 5.6.5 | Safeguarding the side pressure device | 20 |
| 5.6.6 | Safeguarding the front side turn table | 20 |
| 5.6.7 | Safeguarding the pushing out device | 20 |
| 5.6.8 | Safeguarding the rear of the machine with panel pusher (except loading zone) | 20 |
| 5.6.9 | Safeguarding the loading zone at the rear of the machine with panel pusher | 21 |
| 5.6.10 | Minimum clearance at the unloading area | 26 |
| 5.6.11 | Predisposition for top loading/unloading by an external system | 27 |
| 5.6.12 | Integrated trimming unit for offcuts management | 27 |
| 5.7 | Impact hazard | 27 |
| 5.8 | Clamping devices | 28 |
| 5.9 | Measures against ejection | 28 |
| 5.9.1 | General | 28 |
| 5.9.2 | Guards materials and characteristics | 28 |
| 5.10 | Workpiece supports and guides | 28 |
| 6 | Safety requirements and measures for protection against other hazards | 29 |
| 6.1 | Fire | 29 |
| 6.2 | Noise | 29 |
| 6.2.1 | Noise reduction at the design stage | 29 |
| 6.2.2 | Noise emission measurement | 29 |
| 6.3 | Emission of chips and dust | 29 |
| 6.4 | Electricity | 30 |
| 6.5 | Ergonomics and handling | 30 |
| 6.6 | Lighting | 30 |
| 6.7 | Pneumatics | 30 |
| 6.8 | Hydraulics | 30 |
| 6.9 | Electromagnetic compatibility | 30 |
| 6.10 | Laser | 30 |
| 6.11 | Static electricity | 30 |
| 6.12 | Errors of fitting | 30 |
| 6.13 | Isolation | 30 |
| 6.14 | Maintenance | 30 |
| 6.15 | Relevant but not significant hazards | 30 |
| 7 | Information for use | 30 |
| 7.1 | Warning devices | 30 |
| 7.2 | Marking | 31 |
| 7.2.1 | General | 31 |
| 7.2.2 | Additional markings | 31 |
| 7.3 | Instruction handbook | 31 |
| 7.3.1 | General | 31 |
| 7.3.2 | Additional information | 31 |
| Annex A (informative) | List of significant hazards | 33 |
| Annex B (informative) | Performance level required | 35 |
| Annex C (normative) | Stability test | 37 |
| Annex D (normative) | Test for braking function | 38 |

Annex E (normative) Impact test for guards39
Annex F (normative) Noise test code40
Annex G (normative) Rigidity tests for sectional safety curtain material43