CRA SAMPLE

D06 Risk assessment, machinery safety

Example after one year of operation, status 28.02.2028 · Nordwald Wärmetechnik GmbH, networked wood chip boiler NWT HACKTHERM 60 connect

Publisher	OT-Cyber.de, Max Gilg, Rosenheim
Sample company	Nordwald Wärmetechnik GmbH, networked wood chip boiler NWT HACKTHERM 60 connect (fictitious)
Note	Free sample, not legal advice

Company, people, data and numbers are fictitious. This is how the document looks after one year of operation.

1 Purpose and scope

Hazards according to EN ISO 12100 across all life cycle phases, risk reduction using the three-step method (inherently safe design, technical protective measures, information for use) and residual risks for the instructions.

2 Document control

Field	Entry
Document no.	NWT-CE-D06
Version, status	1.3, approved
Scope	NWT HACKTHERM 60 connect (18 to 60 kW), controller, gateway, portal and app
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Checked by	Ingenieurbüro Lechner (safety), Sichtwerk Security (security)
Approval	Michael Berger, Managing Director, 28.02.2028
Next review	15.03.2029 or in the event of a substantial modification
Confidentiality	internal
Filing	Technical documentation NWT-TD-HT60C, retained for at least 10 years after the last unit is placed on the market

3 Risk assessment, machinery safety: overview

How to read the table

Each row is a hazard to people at the installation, sorted by life cycle phase. “Before” is the risk without protection, “Residual” is the risk afterwards. The target everywhere is “low”; anything that remains appears as a warning in the instructions.

ID	Phase	Hazard	Before	Measure	Residual
G01	Operation	Burn-back into fuel store	high	SF1, thermal extinguishing	low
G02	Operation	Overtemperature, steam formation	high	SF2, STL, valve	low
G03	Maintenance	Drawing-in at discharge unit	high	SF4, SF5, interlock	low

ID	Phase	Hazard	Before	Measure	Residual
G04	Cleaning	Burns from hot surfaces	medium	Cover, notice	low
G05	Operation	CO escape in boiler room	high	SF6, negative pressure, CO detector recommended	low
G06	Commissioning	Deflagration on ignition	high	SF7 pre-purge	low
G07	Operation	Restart after power failure	medium	SF8	low
G08	Ash removal	Auger runs with box open	medium	SF9	low
G09	Operation	Remote command during work on boiler	high	SF8, SF10, local acknowledgement	low
G10	Operation	Tampered setpoints from the network	high	G1, G2, SF10, D07	low
G11	Maintenance	Electric shock in control cabinet	medium	EN 60204-1, main switch	low
G12	Transport	Tipping when moving into place	medium	Lifting points, notice	low
G13	Operation	Dust explosion in store	medium	Storage room notice, ventilation	low
G14	Decommissioning	Residual embers when opening	medium	Cooling time, notice	low
G15	Maintenance	Rotary valve jammed, freed by hand	medium	Rotation lock, tool, notice	low

Legend: G = hazard; residual risk after the measure (low, medium, high according to EN ISO 12100).

G15 was added following feedback from commissioning of serial number HT60C-27-0012: a fitter freed a jammed rotary valve by hand. Nobody was injured; a rotation lock and a special tool have been supplied since 09/2027.

Residual risks for the instructions: hot surfaces, dust in the store, residual embers, moving heavy parts into place; adopted in D13 chapter 2 and in the area around the rating plate (D12)

4 Terms and abbreviations

CO: carbon monoxide

SF: safety function

STL: safety temperature limiter

5 Revision history and approval

Version	Date	Change	Approval
1.0	15.01.2027	Initial assessment	M. Berger
1.1	15.03.2027	Alignment with validation	M. Berger
1.2	05.09.2027	Lessons from 21 commissionings, G15 added	M. Berger
1.3	28.02.2028	Reading guide for the table	M. Berger

Approved: Michael Berger, Managing Director, 28.02.2028 (signed in the original). Free sample from OT-Cyber.de, not legal advice. Company, persons, serial numbers and data are entirely fictitious.