

1. PURPOSE OF THE INSTRUCTION

The purpose of this instruction is to define the rules for the use of safety devices, locks, and markings of equipment and installations that protect employees from injuries due to accidental switching on/off. The established procedures aim to prevent failures and accidents caused by uncontrolled switching on/off of machines, equipment, and installations, or uncontrolled feeding of utilities during servicing, upkeep, inspection, operation, maintenance, and the conduct of repair, modernisation, and construction works on the premises of the PCC Group in Brzeg Dolny and Płock.

2. SCOPE OF INSTRUCTION

This instruction applies to the employees of the following companies: PCC Rokita SA, PCC Apakor Sp. z o.o., PCC Autochem Sp. z o.o., ChemiPark Technologiczny Sp. z o.o., Chemia-Serwis Sp. z o.o., Ekologistyka Sp. z o.o., LabAnalityka Sp. z o.o., Zakład Usługowo-Serwisowy „LabMatic” Sp. z o.o., PCC PRODEX Sp. z o.o., PCC Packaging Sp. z o.o., PCC Therm Sp. z o.o., LocoChem Sp. z o.o., PCC Consumer Products Kosmet Sp. z o.o., PCC EXOL SA, PCC MCAA Sp. z o.o., along with companies providing subcontracting services for the aforementioned entities.

In the case of Research and Development Departments and Laboratories within the aforementioned Companies, the person managing the organisational unit is responsible for assigning the responsibilities and authorities arising from this instruction to the positions within the respective organisational unit. The instruction does not apply to research equipment located within active fume hoods.

For external companies, the Work Coordinator is responsible for ensuring compliance with this instruction.

No.	Position (role)	Responsibility and authority
1.	Production Director R&D Director General Director (LA)	<ul style="list-style-type: none">• Supervising the implementation of the instruction
2.	Chief Engineer	<ul style="list-style-type: none">• Supervising the implementation of the instruction
3.	Maintenance Manager	<ul style="list-style-type: none">• Supervising the implementation of the instruction• Supervising the Loto Logbook – Mechanical/I&C/Electrical sectors• Initiating a technical and technological change request• Reserving materials necessary for installing locks
4.	Technologist / Technological Department Employee Manager (RDB) / Team Leader (RDB) Laboratory Manager (LA), Specialist Team Leader (LA)	<ul style="list-style-type: none">• Providing information to operators on the correct types of locks (material of plugs, gaskets)• Initiating a technical and technological change request in situations where the need for a change request arises from the responsibility of the respective Technologist

5.	Department Head Manager (RDB), Team Leader (RDB), Laboratory Manager (LA	<ul style="list-style-type: none">• Supervising the implementation of the instruction• Supervising the Loto Logbook – Mechanical/I&C/Electrical sectors• Supervising the DCS Logbook• Requesting the supply of tags and non-standard locks• Initiating a technical and technological change request in situations where the need for a change request arises from the responsibility of the respective Manager• Reserving materials necessary for installing non-standard locks or delegating the issuance of this reservation
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<p>6.</p>	<p>Operator: (Senior Foreman, Foreman, Production Foreman, Maintenance Foreman*)</p> <p>* Applies to Maintenance Foremen who can be Operators and OW (WTR)</p> <p>Research and Development Specialist and Process Engineer (for R&D)</p> <p>Person designated by the Specialist Team Leader (LA) or Laboratory Manager (LA)</p>	<ul style="list-style-type: none"> • Managing the LOTO Logbook and the DCS Logbook (proper storage of the logbook in a designated place, ongoing monitoring of the correctness of entries, retrieval of the new logbook from storage, submission for destruction (after the required archival period)) • Preparing the installation for safe mounting of locks (separation, emptying, decontamination – where possible). • Assembling and dismantling of non-standard locks, e.g. padlocks, pneumatic balloons • Storing and issuing the appropriate number of tags for the task • Permitting work on the installation. • Providing and securing equipment for the continuous measurement of hazardous substances <p>In the mechanical and I&C (Instrumentation and Control) sectors;</p> <ul style="list-style-type: none"> • Entering in the LOTO Logbook and indicating on the installation the locations of the locks for the duration of the operational works • Entering in the LOTO Logbook the type of locks (DN, lock material, gasket material) during operational works based on the prepared "Specification of Locks and Gaskets" • Entering in the LOTO Logbook confirmation of the installation and removal of locks • Entering into the DCS Logbook a signal for simulation or lockout for suspension • Confirming the deactivation of signal simulation or lockout suspension by signature in the DCS Logbook <p>In the electrical sector;</p> <ul style="list-style-type: none"> • Entering in the LOTO Logbook the apparatus and equipment from which the power supply must be disconnected and secured against accidental switching on • Entering in the LOTO Logbook the command to restore power supply
<p>7.</p>	<p>Operator</p> <p>Research and Development Specialist and Process Engineer (for R&D)</p> <p>Senior Specialist (LA), Specialist (LA), Junior Specialist (LA)</p>	<ul style="list-style-type: none"> • Verifying the installation and removal of plugs (as instructed by a supervisor) • Complying with the prohibition on putting lines or apparatus into operation on which operational works are carried out • Mounting GKK plates on points • Assembling and dismantling of non-standard locks, e.g. padlocks, pneumatic balloons

8.	Control room employees (Controller/Process Operator) Research and Development Specialist and Process Engineer (for R&D) Laboratory Employee (LA)	<ul style="list-style-type: none"> Complying with the prohibition on putting lines or apparatus into operation on which operational works are carried out
9.	Technical Specialist GTP / (Mechanical, Electrical, Automation Sector),	<ul style="list-style-type: none"> Supervising the implementation of the instruction Supervising the Loto Logbook – Mechanical/I&C/Electrical sectors Being responsible for the substantive part of the instruction within the scope of their sector Providing information to LabMatic on where the electricity supply is blocked Issuing opinions on technical and technological change requests within the Mechanical/I&C/Electrical sectors Reserving materials necessary for installing locks
10.	LabMatic/Apakor/Maintenance Employee* (employee assigned to perform the task) * Applies to MCAA and OW (WTR)	<ul style="list-style-type: none"> Assembling and dismantling plugs, LOTO tags and information plates Disconnecting the electricity supply and preventing accidental switching on of equipment during operational works Connecting the electricity supply after receiving information from the operator Entering applied and removed locks in the Loto Logbook Providing a sufficient number of plugs, gaskets and information plates required to meet the requirements of this instruction Activation and deactivation of process signal simulation or technological lockout suspension according to the entry in the DCS Logook
11.	Work Coordinator	<ul style="list-style-type: none"> Informing the operator of the need to prepare a workplace In the event of needing to initiate a change request, starting the Change Request process if it falls within the scope of responsibilities and competencies, or forwarding the information to the person responsible for creating the Change Request who has the appropriate competencies
12.	GKK employee	<ul style="list-style-type: none"> Following this instruction.
13.	Purchasing Department employee (GL)	<ul style="list-style-type: none"> Purchasing the materials necessary to implement the provisions of this instruction (as required).

*** In the absence of the position listed in the table within a given organisational unit, the responsible person will be designated by the Production Director/ Research and Development Director/General Director LA.

3. PROCEDURES

3.1 DEFINITIONS AND ABBREVIATIONS

No.	Term	Definition
1.	Sources of Hazards	<p>Electrical – can cause electric shock, burns, bodily injury.</p> <p>Mechanical – forces of gravity or release of mechanical components (springs, clutches, screws, wheels, etc.).</p> <p>Pneumatic – forces of pressure, movement of air or gas in a container, in an enclosed space.</p> <p>Potential – stored or compressed energy, associated with position and gravitational force.</p> <p>Hydraulic – energy generated by the force of pressure or movement of fluids in compressed zones, pipelines or parts of systems.</p> <p>Chemical – caused by contact with a chemical substance.</p> <p>Thermal – contact with high-temperature surfaces causing burns.</p> <p>Kinetic – energy caused by the movement of mechanical parts, their breakage, and the impact of components belonging to such mechanical assemblies.</p>
2.	Plug	An element that blocks the flow of a medium.
3.	LOTO Tag	A tag that serves to inform and warn against accidental switching on of a device that could lead to a potentially dangerous situation. The tags are placed in locations where locks are applied.
4.	Information plates	Plates stating "Do not switch on" and "Shut off" used as additional elements. ("Do not switch on" is hung where locks are applied and "Shut off" where operational works are carried out).
5.	LOTO – Lockout/Tagout	A system of locks and tags – securing machines, devices, systems, and installations in the area of operational works to prevent unwanted switching on.
6.	Loto Logbook – Mechanical/I&C/Electrical sectors	A logbook located in the control room of the installation/department or a designated place, related to the work being carried out. It specifies the location and type of LOTO locks applied to the installation. There are separate logbooks for the Mechanical, I&C, and Electrical sectors.
7.	Power control point	A point where the energy source is locked out (e.g. valve, circuit breaker, fuse, etc.).
8.	Operational works	Renovation, modernisation, construction, inspection, and service work.
9.	DCS Logbook	A logbook located in the control room of the installation/production department. It specifies the location and type of locks applied in the control system.
10.	Signal simulation or lock suspension	Software or hardware input of a fixed process signal value regardless of the system state.

11.	LabMatic/Apakor employee	An employee employed by or providing subcontracted services to LabMatic/Apakor.
12.	Electrical lockout	Cutting off the electricity to a device in such a way that it cannot be switched on accidentally. Electrical lockout can be implemented by: <ul style="list-style-type: none"> • removing fuses in the supply circuit, • blocking the drive of an open connector, • disconnecting the power cable on a switched-off circuit.
13.	TIP (tie-in-point) / TOP (tie-on-point)	Point of contact between the existing (active) part of the installation and the new/upgraded one

3.2. GENERAL RULES

The Loto instruction must be complied with whenever there is an assembly/disassembly of all or part of machinery, equipment, technical, technological, research or teletechnical installations (e.g. detection systems and fixed fire extinguishing equipment) and at the point of contact of a newly built installation with an existing one (TIP and TOP).

It should also be used for containers (cylinders and drums) intended for storing liquid or gaseous substances under pressure and the pipes (rigid and flexible) carrying the substance from these containers to the place of final use, as well as in reverse cases, i.e. when the substance is fed into the container (e.g. loading of cylinders or drums). This does not apply to containers with products manufactured by Companies from PCC Group if the procedures for

handling them are specified in operating instructions and/or loading instructions.

The instruction should also be applied in situations where work is carried out on shut down installations.

3.2.1. The basis for the commencement of operational work on the premises of the Companies from PCC Group is the permission to work on the installation issued by the Operator (depending on the organisation, this may be: an entry in the Fault Logbook or a permit to carry out particularly hazardous/fire hazardous work or a written order to carry out the work (if required)) or the Conditions of Groundwork/Local Groundwork Permit and an entry in the Works Logbook or in SAP/SAD/CMMS/Nuxeo. The persons responsible for planning and organising maintenance in the organisational unit must be informed of the planned work. Executing the process described in this instruction does not constitute approval for operational works.

3.2.2. Change Request.

The blocking of apparatus, equipment and pipelines as part of the activities described in this instruction does not require the execution of a change procedure (Change Request). If a lockout is required in the DCS, a Change Request must be submitted. Depending on the mode of lockout implementation, a standard or emergency request must be submitted.

3.2.3. Plugs.

In the case of flanged connections, apparatus, equipment and pipelines are blanked off using blind flanges (steel spade flange) or blanking flanges (EN1092-1 type 05 blind flange).



Spade flange



Type 05 blind flange

For connections other than flanged connections (such as threaded connections or quick couplings), the blanking off of apparatus, equipment, and pipelines is performed using plugs with the appropriate type of connection point. Below are examples of different types of plugs depending on the connection point type.



The material of the plug and the gasket should be adapted to the type of medium and the conditions of the installation site.

If blanking off is carried out on the valve, it is permissible to use steel spade flanges with a plug thickness of no less than 2 mm.

If blanking off is to be carried out at the end of a pipeline or on a pipeline with a dismantled valve, blanking flanges (type 05 blind flange) must be used.

If the plug material is different from the pipeline construction material, then steel plugs with a full gasket (same gasket material as the rest of the gaskets on the pipeline) must be used on the utility side, but must not be cut with a "compass" (to prevent material discontinuity).

If the material of the plug is the same as the material of the pipeline that is in direct contact with the utility, then it is permissible to use a steel plug with such a gasket as is documented on the pipeline.

For black steel pipelines, it is acceptable to use plugs made of corrosion-resistant steel.

For pipelines made of titanium, nickel and their alloys, including duplex, only plugs made of corrosion-resistant steel are to be used.

Blanking off and unblanking operations on the active part of the installation should be carried out with particular care. In the case of hazardous utilities, where it is not possible to verify the performance of the valve (cut-off valve), it is recommended to conduct continuous monitoring of hazardous substances using portable gas analysers. If there are emissions of a hazardous substance indicating a faulty valve, then work must be stopped, the production master and supervisor must be notified, the plant (the necessary part to be replaced) must be stopped and the faulty valve replaced.

If solid blanking flanges are used, Loto tags should be placed on one of the fixing screws of the particular plug or on the pipeline where the plug is used.

When using spade flanges, Loto tags should be placed on the protruding part of the plug or suspended from one of the plug fixing screws at the spade flange location. The protruding parts of the plugs are to be painted in a bright colour (yellow, orange) or a 40cm long sash in a bright colour is to be attached that extends beyond the outline of the pipeline insulation.

If the situation requires it, it is permissible to use additional Loto tags on the cut-off valves before the installed plug.

The use of spectacle blinds is recommended, especially on newly built and retrofitted parts of the installation.

3.2.4. In exceptional situations, the following measures are permitted:

- 1) use of a valve lock with a padlock - applicable in cases where the installation of a blanking flange/spade flange is unfeasible, e.g. valves welded to pipelines (no flanged connections); flanged connections with large diameters (e.g. DN500) or small diameters (e.g. 6mm), where installing a plug is impossible.
- 2) use of a pressure plug ("balloon") - applicable in situations where the installation of a blanking flange/spade flange is unfeasible and there are no valves that allow the use of a padlock.
- 3) decoupling of the automatic valve to leave it in the closed position (for FO automatic valves) or cutting off the power supply to the valve (in the case of FC automatic valves).
- 4) use of locking mechanisms other than plugs when replacing equipment/machines/technical, technological, or telecommunication installations or their components immediately after disassembly, i.e. without interrupting operations (e.g. replacing pumps, filter elements, valves, cells, etc.).
- 5) there is no need to use LOTO locks in situations where filter elements are being replaced, and the production worker independently prepares the workspace and performs the replacement (valves within line of sight up to 15 meters and on the same level) without entering the interior of the apparatus.

Each decision regarding the type of lockout to be applied must be made by the Operator, the person authorising the work, or the Work Coordinator, in consultation with the Operator. In case of any doubts about the use of a non-standard lockout method, the matter should be clarified with the GB Office staff.

3.2.5. Tags. The tags used should be made according to the template provided below. The tag templates can be found in point 5, "List of Forms," of this instruction. The tags are ordered in batches as per the needs of the Departments.



Photo 1. Example of a LOTO Tag for the Department

3.2.6. Information plates. The information plates used should be made according to the following model. The plate templates can be found in point 5, "List of Forms," of this instruction. The plate are ordered in batches as per the needs of the Departments.



Photo 2. Information plate "DO NOT SWITCH ON!"



Photo 3. Information plate "SHUT OFF"



Photo 4. D1 distant signal - STOP

3.3. PROCEDURE DESCRIPTION

3.3.1. Procedure in the mechanical and I&C sectors

Lockout procedure:

- a) The Operator identifies the necessary lockout points, enters them into the Loto Logbook (for the specified sector), and indicates the location on the installation (if necessary) and the required type of lockout (plug, spade flange, padlock, cap). The Operator fills in columns 1 to 7 in the Loto Logbook.
- b) The employee assigned to the task (LabMatic/Apakor) organises the materials necessary to install the lockouts listed in the LOTO Logbook. If there are any doubts, the employee consults with their supervisor regarding the course of action.
- c) The employee assigned to the task (LabMatic/Apakor) installs the locks and LOTO tags specified in the LOTO Logbook and confirms their installation with a **legible** signature in column 8 of the LOTO Logbook.
- d) The Operator is responsible for verifying and personally confirming the correct installation and lock numbers with a legible signature in column 9 of the Loto Logbook.

Removing the lock:

- e) The Operator orders the removal of the specified locks and LOTO tags by the employee assigned to the task (LabMatic/Apakor).
- f) The employee assigned to the task (LabMatic/Apakor) removes the locks and LOTO tags from the specified locations.
- g) The Operator checks and confirms their removal with a **legible** signature in column 11 and recording the date of removal in column 10 of the LOTO Logbook.

NOTE: In the case of using non-standard locks, the lockout application and removal operations are organised by the Operator.

3.3.2. Procedure in the electrical sector

Lockout procedure:

- a) The Operator identifies and then records* in the LOTO Logbook (for the electrical sector) the equipment that requires an electrical lockout (filling in columns 1 to 3 of the LOTO Logbook).
- b) The employee assigned to the task (LabMatic) organises the materials necessary to apply the electrical lockout and its labelling with one or more plates.
- c) The employee assigned to the task (LabMatic) installs the electrical lockout. After installing the lockout, the employee places a "Do Not Switch On" information plate in the electrical

switchboard

and hangs a tag and a "Shut-off" information plate at the site of the operational works.

- d) The employee assigned to the task (LabMatic) makes an entry* in the LOTO Logbook (for the electrical sector) in columns 4 to 7.

Removing the lock:

- e) The Operator orders the restoration of power by making an entry* in column 8 of the Loto Logbook (for the electrical sector).
- f) The employee assigned to the task (LabMatic) restores the energy supply and removes the plate(s).
- g) The employee assigned to the task (LabMatic) confirms the restoration of energy supply and the removal of the plate(s) by making an entry* in column 9 of the Loto Logbook (for the electrical sector).

*** entries and signatures must be legible**

3.3.3. Procedure for simulating process signals or suspending technological lockouts in the control system (DCS).

Lockout procedure:

- a) The Operator identifies the signal that needs to be simulated or the lockout that needs to be suspended, and then records* it in the DCS Logbook by filling in columns 1 and 2. The need for applying a DCS lockout can be identified during the work planning stage.
- b) The Operator orders the initiation of the technical and technological change procedure in normal mode or activates it in emergency mode (in accordance with PZB.PR.08 Management of Technical and Technological Changes). Deviations from this procedure are possible for simulations/suspensions described in instructions or previously approved through an appropriate Change Request. For planned work, the initiation of the technical and technological change procedure should be initiated by the Technologist/Technological Department employee.
- c) After receiving information about the approval of the Change Request, the Operator orders the activation of the lockout by filling in column 3.
- d) The employee assigned to the task (LabMatic) activates the ordered lockout by filling in columns 4 and 5. In the case of remote working, columns 4 and 5 are filled in by the Operator.

Removing the lock:

- e) The employee responsible for operating the installation orders the deactivation of the lockout.
- f) The employee delegated to perform the task (LabMatic) deactivates the lock and makes entries* in columns 6 and 7. In the case of remote working, columns 6 and 7 are filled in by the Operator

*** entries and signatures must be legible**

3.3.4. Procedure in the Railway Department (GKK).

Protection and securing of transfer points during loading/unloading and shunting operations.*

- a) For the duration of dangerous goods handling operations at handling points located on tracks Nos. 111, 113÷116, 118, 120, 121, Nos. 154, 159, 160, 165, 166, 170, 171, 190, 193÷196, 198, 199 and 200 – these points are protected by signals with a flashing red light, which means prohibition of rail traction unit entry and shunting operations, and a D1 signal placed in the track to indicate closure of the track to traffic.
- b) Additionally, during handling operations, the handling points located on tracks Nos. 111, 113, 114, 116, 118, 120, 131, 154, and 166, as well as repair points located on track No. 161, are protected against the approach of other rail vehicles by derailleurs. The keys to these derailleurs are kept by the Railway Dispatcher of the PCC Rokita S.A. railway siding.
- c) D1 signals on the tracks in front of the handling points are installed and removed only by authorised employees of those points. The D1 signals are removed from the track only after the loading or unloading of the rail tanker is completed and this has been reported to the railway dispatcher.
- d) Before a rail traction unit or shunting train enters a handling or repair point, the siding shunter of PCC Rokita S.A. instructs the rail traction unit operator to halt the shunting and ensures that the flashing red warning light is off, the D1 distant signal is removed from the track, the carriages are not connected to mechanical handling devices (e.g. filling stations, conveyors), and that there are no other obstacles to the handling of the point in question.
- e) Once the operation of the handling point has been completed, the shunter closes the railway derailleurs and reports this to the railway dispatcher.
- f) Rail derailleurs are operated only by shunters.

* Detailed information is provided in the following instructions: PCCR_5_Instruction on Shunting Techniques at the PCC Rokita S.A. Railway Siding and PCCR_11_Instruction for Handling and Repair Points at the PCC Rokita S.A. Railway Siding.