



MINISTRY OF EDUCATION,  
HIGHER EDUCATION AND RESEARCH

Higher technician certificate

Maintenance of construction and  
handling equipment

Implementation at the start of the 2017 school year

## 1. The job of the senior technician

### 1.1 Description of the field of activity

The senior technician's certificate in maintenance of construction and handling equipment gives access to jobs in the maintenance and after-sales of materials and equipment for building and public works (BTP) and handling.

### 1.2 The economic context

#### 1.2.1 Company typology

The holder of a senior technician certificate in the maintenance of construction and handling equipment fits into companies of variable size, very small companies (VSEs), small and medium-sized companies (SMEs), medium-sized companies (ETI), groups and group subsidiaries.

The profession is practiced in:

- equipment distribution and maintenance concessions and companies; • the entities of equipment manufacturers (head offices, subsidiaries, branches, agencies, points services...);
- equipment rental companies; • service companies (specialized operators, inspection companies, etc.); • the maintenance departments of companies and local authorities that use these materials.

#### 1.2.2 The jobs concerned

Depending on the size of the company, the holder of the senior construction and handling equipment maintenance technician certificate carries out all or part of his or her activities in a maintenance workshop or on site. He or she can be: • itinerant/workshop technician; • diagnostic and maintenance technician; • technical adviser; • team leader; • technical/parts "hot line" adviser; • technical / parts inspector.

#### 1.2.3 The field of professional activities

Within his company, his activities consist of: • carrying out a complete diagnosis; • conduct an intervention; • ensure the relationship with a third party, including in English; • participate in the organization of the service's activities.

In a cross-cutting manner, the holder of the senior technician certificate in the maintenance of construction and handling equipment mobilizes:

- technical skills in different aspects of maintenance; • skills in organizing and managing one's activity; • computer skills for communication purposes and software operation specialized;
- skills in internal (teamwork) and external (customer relations, with the technical support of manufacturers and other interlocutors);
- oral and written skills in English (technical documentation, continuing education, e-mail...).

The holder of the senior technician certificate for the maintenance of construction and handling equipment contributes to compliance with regulations, both technical, safety and environmental and social, and to the quality of after-sales service.

## 2. Description of professional activities

### 2.1 Summary of the professional tasks associated with the activities

Professional activities		Professional tasks A1-T1	
A1	Carry out a diagnosis		Confirm the malfunction stated by the customer.
		A1-T2	List the technical information needed for diagnosis.
		A1-T3	Carry out tests and measurements with regard to manufacturer / supplier / company procedures.
		A1-T4	Analyze the malfunctioning system and interpret the checks and measurements.
		A1-T5	If necessary, complete the diagnosis with the help of technical assistance or any competent contact person.
		A1-T6	Establish and send the estimate.
A2	Conduct an intervention	A2-T1	Organize the intervention.
		A2-T2	Perform preventive and corrective maintenance.
		A2-T3	Carry out specific operations (for example: regulatory or procedural checks, commissioning).
A3	Ensure the relationship with a third party, including in English	A3-T1	Communicate with the customer.
		A3-T2	Communicate with the hierarchy.
		A3-T3	Communicate with other interlocutors (for example: company services, technical support from manufacturers, insurance expert).
A4	Participate in the operation of the service	A4-T1	Contribute to the health, quality, safety and environment (HQSE) policy.
		A4-T2	Take into account the economic, legal and organizational aspects of the company in the course of activities.
		A4-T3	Develop specific technical expertise.

## 2.2 Levels of autonomy and responsibility in the activity

In the presentation sheets for the following professional activities, the level of autonomy can be defined as an indicator of the level of intervention and involvement in carrying them out by the senior maintenance technician for construction and handling equipment. . The level qualifies the average level of all the tasks related to the activity, certain tasks can be of a higher or lower level, the action verb describing them makes it possible to situate them in relation to this average level.

A four-level scale was adopted:

### Level 1 **ÿÿÿÿ Appreciate an achievement**

Qualifies the mobilization of skills allowing to understand, through a presentation or reading a file, the nature of an activity that does not come under its direct field of intervention and to interpret the results.

This level does not in any way imply an ability to participate in the activity.

### Level 2 **ÿÿÿÿ Participate in the realization**

Qualifies the mobilization of skills allowing to ensure a limited part of the activity within and with the help of a team, under the authority of a project manager.

It involves getting informed and communicating with other team members.

### Level 3 **ÿÿÿÿ Carrying out a simple activity**

Qualifies the mobilization of skills to carry out, independently, all or part of an activity for the most common situations.

It implies: - a

- mastery, at least partial, of the technical aspects of the activity; - the faculties to obtain information, to communicate (report and argue) and to organize themselves.

### Level 4 **ÿÿÿÿ Carrying out a complex activity**

Qualifies the mobilization of skills enabling mastery on the technical, procedural and decision-making levels of an activity involving multiple decision-making.

It involves:

- the ability to certify the adequacy between the goals and the results; - leading and supervising a team; taking full responsibility
- for any decisions; knowledge transfer.
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### 3. Description of activities

#### Activity 1: Make a diagnosis

Level of task autonomy in the activity:  $\ddot{y}\ddot{y}\ddot{y}$

A1-T6:  $\ddot{y}\ddot{y}\ddot{y}$

#### Description of tasks and expected results

Ref	Tasks	Description of the task
A1-T1	Confirm the malfunction stated by the customer.	Carry out the appropriate checks (reproduce the configuration described by the customer, carry out the necessary checks and tests, etc.).
<b>RA1-T1 The malfunction is correctly observed or reformulated.</b> <b>The checks and tests carried out are consistent.</b>		
A1-T2	List the technical information necessary for the diagnosis.	<p>Identify the material and its equipment (serial number and/or specificity).</p> <p>Check and interpret the indications given on the intervention order. Make assumptions about the source of malfunction.</p> <p>Search for information (hardware history, technical notes, etc.).</p> <p>Analyze and prioritize the collected data.</p>
<b>RA1-T2 The material is correctly identified.</b> <b>The client's declarations mentioned on the intervention order are checked and interpreted correctly.</b> <b>Coherent hypotheses with regard to the observation are made.</b> <b>Technical data is properly collected, analyzed and prioritized.</b>		
A1-T3	Carry out tests and measurements with regard to manufacturer / supplier / company procedures.	<p>Choose the appropriate measuring tools.</p> <p>Conduct tests and measurements in accordance with manufacturer/supplier/company procedures.</p> <p>Develop a procedure in the absence of one or improve the existing one.</p> <p>Collect, organize and prioritize the findings and information found during the tests.</p> <p>Produce a summary of the test results by establishing a coherent relationship between the observed effect and the probable cause.</p>
<b>RA1-T3 The appropriate measurement tool is selected and correctly implemented.</b> <b>The recommended procedure is correctly applied.</b> <b>The results collected during the tests and measurements are usable.</b>		
A1-T4	Analyze the malfunctioning system and interpret the checks and measurements.	<p>Define an operating logic.</p> <p>Analyze the symptoms, all the data and measurements taken.</p> <p>Compare measured values to manufacturer values, identify discrepancies.</p> <p>Search the history of interventions for any similar malfunctions and their causes.</p> <p>Make assumptions about the cause of the malfunction.</p>

		<p>Use on-board or hardware-independent diagnostic aid tools to confirm assumptions.</p> <p>Identify faulty system(s) or component(s).</p> <p>Identify the probable cause of the failure.</p> <p>Identify the unsuitable setting(s) or setting(s).</p> <p>Identify the system(s) or peripheral component(s) that may have been damaged by the malfunction.</p> <p>Conclude and propose solutions.</p>
<b>RA1-T4</b>	<p><b>The diagnostic approach is relevant and logical.</b></p> <p><b>Non-conforming measured values are flagged.</b></p> <p><b>The assumptions made are relevant and related to the malfunction observed.</b></p> <p><b>The identification of the system(s), of the component(s), of the setting(s), of the faulty setting(s) is correct.</b></p> <p><b>The diagnosis is established and formalized as part of the intervention order.</b></p>	
A1-T5	<p>If necessary, complete the diagnosis with the help of technical assistance or any competent contact person.</p>	<p>Contact technical assistance at the appropriate time and respecting the possible procedure.</p> <p>Provide technical assistance with the history and pre-diagnosis.</p> <p>Complete the formulation of hypotheses and establish the diagnosis.</p>
<b>RA1-T5</b>	<p><b>Contact with technical assistance is relevant.</b></p> <p><b>The history and the pre-diagnosis are correctly returned to technical assistance.</b></p> <p><b>The diagnosis is validated.</b></p>	
A1-T6	<p>Establish and send the estimate.</p>	<p>Based on the diagnosis selected, choose the economically appropriate intervention process(es) (place, conditions and methods of intervention).</p> <p>Determine all the components of the estimate (spare parts, time, labor, external service).</p> <p>Communicate the estimate in accordance with the procedures.</p>
<b>RA1-T6</b>	<p><b>The choices made for the intervention are economically appropriate.</b></p> <p><b>The spare parts and the necessary products have been well defined.</b></p> <p><b>The estimate is correctly established and the estimate transmitted.</b></p>	

### Conditions of realization

- **The environment** ü

The work area in the workshop or on site and possibly in liaison with the client, the hierarchy, the set service and service providers, the spare parts department. • **The data**

- ü The technical documentation of the manufacturer and the suppliers or software publishers, ...;
- ü Procedures and constraints related to safety, quality, hygiene and the environment;
- ü The regulatory context;
- ü Normative documents, supplier database;
- ü The order of intervention;
- ü The single occupational risk assessment document;
- ü Ergonomic rules, safety regulations (prevention plan), specific procedures to be followed;
- ü Economic constraints;
- ü Failure history of malfunctioning equipment;
- ü Maintenance contracts.

- **Means** ü The

usual computing environment of the profession; ü

Means of transport and lifting; ü The general principles

of prevention (labour code) and the mechanisms for applying the rules

ergonomics, hygiene, health, safety and environmental protection; ü Measuring devices and diagnostic tools.

## Activity 2: Conducting an Intervention

**Level of autonomy in the activity:** yyy

### Description of tasks and expected results

Ref	Tasks	Description of the task
A2-T1	Organize the intervention.	<p>Prepare the intervention (intervention order, documentation and workstation).</p> <p>Provide human and material resources.</p> <p>Choose the appropriate procedure, define the different phases of the intervention and plan its progress.</p> <p>Implement the protection and safety measures prior to the intervention (consignment and de-energization).</p> <p>Take environmental rules into account (for example: selective sorting, effluent management).</p> <p>Manage co-activity with service providers and subcontractors.</p> <p>Ensure the administrative follow-up of the intervention (for example: transmission for invoicing, specific documents, replenishment of spare parts, machine history).</p> <p>Know and respect the contractual commitments and the general conditions of sale, repair, rental.</p> <p>Comply with the client's prevention plan and regulatory constraints. Develop an optimal choice of the means and methods used.</p>
RA2-T1	<p><b>The context of the intervention, the parts supply times, the means to be mobilized, the workshop schedule and the scaled intervention times are taken into account.</b></p> <p><b>The appropriate procedure is selected and the course of the intervention is planned.</b></p> <p><b>The intervention order is implemented.</b></p> <p><b>The correct work location is defined and available.</b></p> <p><b>Consumables and spare parts are available.</b></p> <p><b>Company and manufacturer repair procedures are consulted and followed.</b></p> <p><b>The necessary tools are identified and available at the workstation.</b></p> <p><b>The measures related to the rules of ergonomics, hygiene, health, safety and environmental protection are applied in accordance with the regulations in force.</b></p> <p><b>The equipment is protected, possibly logged out and de-energized.</b></p> <p><b>The activity of the service provider or subcontractor is integrated into its own intervention.</b></p> <p><b>The administrative follow-up of the intervention is correctly carried out.</b></p> <p><b>The intervention respects the contractual commitments and the general conditions.</b></p> <p><b>The intervention is carried out in compliance with regulatory constraints and by optimizing resources.</b></p>	
A 2T2	Perform preventive and corrective maintenance.	<p>Perform periodic maintenance.</p> <p>Deposit and handle an element or a sub-assembly.</p> <p>Ensure the repair of organs or sub-assemblies.</p> <p>Check and identify faulty elements.</p> <p>Determine the parts to order.</p>



		<p>Proceed with reassembly, adjustments (or settings) and recommissioning.</p> <p>Carry out the self-monitoring of the intervention.</p> <p>Configure an embedded system.</p>
<b>RA2-T2</b>	<p><b>The maintenance operations carried out meet the manufacturer's requirements and the customer expectations.</b></p> <p><b>On-board systems are correctly tuned and/or configured.</b></p>	
A2-T3	<p>Carry out specific operations (for example: regulatory or procedural checks, commissioning).</p>	<p>Perform equipment adaptation and preparation operations.</p> <p>Install equipment.</p> <p>Carry out the commissioning and/or "hand" of the equipment.</p> <p>Perform preventive and corrective maintenance operations.</p> <p>Carry out regulatory checks (for example: VGP periodic general checks, VRS and VCRS commissioning and re-commissioning checks).</p> <p>Perform procedural controls (eg ISO, internal).</p>
<b>RA2-T3</b>	<p><b>Regulatory or procedural checks have been carried out. Maintenance operations carried out meet the manufacturer's requirements and the customer's expectations.</b></p> <p><b>Regulatory or procedural checks have been carried out.</b></p> <p><b>Equipment adaptation, preparation and installation operations are carried out correctly.</b></p> <p><b>The commissioning and/or "hand" operations of the equipment are correctly carried out.</b></p> <p><b>On-board systems are correctly tuned and/or configured.</b></p>	

## Conditions of realization

- **The environment** ü The

work area in the workshop, on site or remotely and possibly in liaison with the customer, the hierarchy, the technical platform and the service providers, the spare parts department.

- **The data** ü The

technical documentation of the manufacturer and the suppliers or software publishers, ...; ü Procedures and constraints related to safety, quality, hygiene and the environment; ü The regulatory context; ü Normative documents, supplier database; ü The order of intervention; ü The single occupational risk assessment document; ü Economic constraints; ü The state of the store's stock, spare parts; ü Failure history of malfunctioning equipment; ü Maintenance contracts.

- **Means** ü The usual

computing environment of the profession; ü Human resources; ü The means of transport and lifting, general principles of prevention (labour code); ü Ergonomics, hygiene, health, safety and environmental protection rules; ü Measuring devices and diagnostic tools; ü Repair tools.

## Activity 3: Ensure the relationship with a third party, including in English

Level of autonomy in the activity: ÿÿÿÿ

### Description of tasks and expected results

Ref	Tasks	Description of tasks
A3-T1	Communicate with the customer.	<p>Establish a relationship with the client (on the phone, face-to-face, by email, by SMS) in compliance with company procedures.</p> <p>Receive the customer.</p> <p>Listen and collect the information necessary for the activity related to the intervention.</p> <p>Inform the client, in interaction with the hierarchical link, on the contours of the intervention (for example: deadline, duration, cost) and its evolution.</p> <p>Inform, advise the customer on the additional technical and commercial services available.</p>
<p><b>RA3-T1 Contact with the client is reactive, interactive and adapted to the situation (before, during and at the end of the intervention).</b></p> <p><b>The information needed to prepare and/or carry out the intervention is correctly collected.</b></p> <p><b>The client is informed and advised of the various services available as well as the duration and cost of the intervention.</b></p>		
A3-T2	Communicate with the hierarchy.	<p>Report on the situation (context, technique).</p> <p>Explain and justify the estimate.</p> <p>Comply with any company validation procedures.</p> <p>Collect specific instructions.</p>
<p><b>RA3-T2 The situation is presented in an exhaustive and structured manner.</b></p> <p><b>The estimate is explained and justified.</b></p> <p><b>Validation procedures and instructions are followed.</b></p>		
A3-T3	Communicate with other interlocutors (for example: company services, technical support from manufacturers, insurance expert).	<p>Find out about the contours of the intervention.</p> <p>Obtain and read the appropriate technical documentation.</p> <p>Share / compare your field experience with the manufacturer's technical support.</p> <p>Participate in the appointment of expertise in insurance.</p>
<p><b>RA3-T3 Service order is understood.</b></p> <p><b>Documentation is obtained and understood.</b></p> <p><b>Discussions with the manufacturer's technical support are fruitful.</b></p> <p><b>The answers to the questions during the appraisal meeting are adapted.</b></p>		

### Conditions of realization

- **The environment** ü In

the workshop or on site with the customer and his equipment;

ü On the phone, by e-mail.

- **Data** ü

Maintenance contracts; ü The regulations relating to the conditions of use of the equipment; ü Procedures and constraints related to HQSE rules; ü The regulatory context; ü Normative documents, supplier database; ü The order of intervention; ü The single occupational risk assessment document; ü Economic constraints.

- **Means** ü The

usual computing environment of the profession; ü Appropriate means of communication.

## Activity 4: Participate in the operation of the service

**Level of autonomy in the activity: ÿÿÿÿ**

### Description of tasks and expected results

Ref	Tasks	Description of tasks
A4-T1	Contribute to the health, quality, safety and environment (HQSE) policy.	Comply with the various charters and regulations. Propose improvements in procedures with regard to charters and regulations.
<b>RA4-T1 The texts are known and respected. Suggestions for improvements are relevant.</b>		
A4-T2	Take into account the economic, legal and organizational aspects of the company in the conduct of activities.	Integrate the notions of cost calculation for customer invoicing. Integrate the management elements in relation to the organization of the activity of the senior technician. Integrate its activity in coherence with the services of the company. Integrate the legal dimension (for example: liability, contracts, guarantees, maintenance contracts, general conditions of repair, sale, rental).
<b>RA4-T2 Economic, legal and organizational concepts are understood and used correctly wisely. The contractual dimension is assimilated.</b>		
A4-T3	Develop specific technical expertise.	Obtain new knowledge and skills as needed.  Transmit their skills and/or experience.
<b>RA4-T3 New concepts are assimilated. Communication is structured and adapted to the interlocutor.</b>		

### Conditions of realization

- **The environment** ü

Within the company; ü In the workshop, on the move or on site.

- **Data**

ü Procedures and constraints related to safety, quality, hygiene and the environment; ü The regulatory and contractual context; ü Databases (manufacturers, company, suppliers, etc.).

- **Means** ü The

usual computing environment of the profession; ü Training courses; ü Appropriate means of communication.