VALIDATION CRITERIA TRAINING REQUIREMENTS FOR COORDINATION OF BUSINESS ACTIVITIES:

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1. PURPOSE

The purpose of this document is, on the one hand:

- to set out the training requirements in the field of occupational risk prevention that will be required of our partner companies and self-employed workers.

And, on the other hand:

- to establish criteria for validating the preventive documentation submitted by them via ATLAS, the IT application used to manage documentation between EDP, contractor companies and self-employed workers, in connection with the Coordination of Business Activities.

This document defines the following for each training course:

- its THEORETICAL CONTENT, which enables EDP to validate the documentation provided by contractor companies and self-employed workers and helps all of them to design the necessary training.
- the requirement for PRACTICAL TRAINING, applicable to those courses for which the document specifies it.
- the MINIMUM DURATION that each of the required training courses is deemed to need.
- REFRESHER TRAINING, for those courses in which it is deemed necessary.

All of this is without prejudice to the obligation to comply with the legal requirements on occupational risk prevention that apply in each case to the activity put out to tender/contract.

These occupational risk prevention training requirements will be made known to bidding contractor companies and self-employed workers during the tendering processes that are established, so that they are aware of what will be required of them should any of the training specified in the document be applicable, both at the start of service provision and throughout its duration.

In addition, and to make it easier to handle, the table of contents included in the previous edition of the document has been improved, allowing quicker identification of the different training criteria.

2. TABLE OF CONTENTS

2.1. FIRE EXTINGUISHING

FIRE EXTINGUISHING (DURATION 4 HOURS) THEORETICAL-PRACTICAL REFRESHER: 3 YEARS
1. Legislation 2. Basic concepts of fire 3. Classification of different types of fire 4. Preventive measures 5. Fire extinguishing techniques 6. Extinguishing agents 7. Fire extinguishing equipment 8. Signs 9. Detection and alarm systems 10. Procedures in the event of a fire 11. Practical exercises. Use of extinguishers for Class A and Class B fires (chemical powder and carbon dioxide extinguishers) and/or water hoses

2.2. FIRE EXTINGUISHING (AELĒC)

FIRE EXTINGUISHING (AELĒC) (DURATION 4* HOURS) THEORETICAL-PRACTICAL REFRESHER: 3* YEARS	
The content and entities delivering the training must comply with those published in the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, the training identified as "**Firefighting Training" in the AELĒC standard.** Details can be found on the AELĒC website (https://formacion.aelēc.es) IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	**Staff HIRED by companies adhering to the AELĒC training standard**

2.3. FIRST AID

FIRST AID (DURATION 4 HOURS) THEORETICAL-PRACTICAL REFRESHER: 3 YEARS
1. Basic principles of first aid a. General first aid guidelines b. Assessing the injured person/victim (consciousness, breathing, pulse) i. Observing signs ii. Positioning victims (safe postures, recovery positions) 2. Cardiorespiratory arrest a. Safety at the scene b. Checking consciousness and breathing c. Opening the airway with the head-tilt/chin-lift manoeuvre d. CPR techniques 3. Specific procedures a. Wounds and bleeding (recognising different types, including presence of foreign bodies) b. Burns (electrical, chemical, and thermal) c. Trauma and fractures (immobilisation) d. Poisoning e. Allergic reactions f. Thermoregulation emergencies g. Choking. Heimlich manoeuvre.

h. Electrocution 4. Casualty transport 5. Practical cases: a. Practical CPR exercises with a manikin b. Scenario-based exercises to recognise symptoms and choose courses of action according to information obtained at different stages c. Transporting the casualty by a single worker

2.4. FIRST AID (AELĒC)

FIRST AID (AELĒC) **(DURATION 4* HOURS)** **THEORETICAL-PRACTICAL** **REFRESHER: 3* YEARS**	
COURSE APPLICABLE TO ->	
The content and entities delivering the training must comply with those published in the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, with the training identified as **"AELĒC standard first aid training".** Details can be found on the AELĒC website (https://formacion.aelēc.es) IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	**Staff HIRED by companies adhering to the AELĒC training standard**

2.5. SELF-PROTECTION PLANS

SELF-PROTECTION PLANS **(DURATION 1 HOUR)** **THEORY** **REFRESHER: 4 YEARS**	
1. General structure of the Self-Protection/Emergency Plan: emergency organisation chart and general procedure in the event of a fire 2. Specific duties of each designated manager: Emergency Supervisor, Control Centre, First Intervention Team, and Alarm and Evacuation Team 3. Existing fire protection means at the centre, their location and functions 4. Preventive measures to avoid emergencies	**Applicable to external personnel who are part of the intervention teams defined in our Self Protection/Internal Emergency Plans**

2.6. ELECTRICAL RISK 1

ELECTRICAL RISK 1 **(DURATION 4 HOURS)** **THEORY** **REFRESHER: 3 YEARS**
1. Overview of electrical risk: a. General aspects of electrical installations • Voltage levels in an electrical installation. Power circuits. Heavy-duty circuits. Control circuits • Identification of voltage levels in an electrical installation • Passive protection systems in electrical installations b. R.D. 614/2001: Art. 4. Work techniques and procedures • Conditions for carrying out work on an electrical installation • Types of work on an electrical installation c. Types of electrical accidents • Electric arc • Contact and current flow • Direct contact • Indirect contact d. Effects of current on the human body e. Induction and static charge f. Worker training

g. Types of work on electrical installations: information and qualifications required
h. Work on de-energised circuits
   - Work in the live working area
   - Work in the proximity area
   - Work outside the proximity area
i. Work techniques and procedures used

2. Neutral voltage work

a. Description of work methods depending on the type of facility (local and remote) and different types of installations: overhead, underground, SF6, indoor air, and outdoor
b. Definition of protected zone and work zone
c. Safety conditions for applying the five golden rules in a protected zone
   - Disconnect or verify disconnection
   - Prevent any possible backfeed (lockout and tagout)
   - Verification of de-energised status
   - Earthing and short-circuiting in a protected zone
d. Safety conditions for applying the five golden rules in a work zone
   - Verification of de-energised status
   - Earthing and short-circuiting in a work zone
   - Protect against nearby live elements, and post safety signage to delimit the work zone
e. Ensuring the protected zone and the work zone are the same
f. Action required when re-energisation is needed
g. Discharges
   - Process and roles of participants
     – Applicant and requester
     – Control centre
     – Order communication and logging process
     – Local operator
     – Discharge agent
     – Work supervisor
     – Employees
   - Actions at boundary points of installations and in jointly owned facilities

3. Introduction to live work

a. Live-line work. Live work methods:
   - LV and HV contact method
   - Potential method
   - Remote method
b. Work procedures
c. Live-line work. Process and roles of participants
   - Applicant and requester
   - Control centre
   - Order communication and logging process
   - Installation manager
   - Work supervisors
   - Employees

4. Working in proximity

a. General considerations. Preventive measures
b. Preparation procedures for work in proximity
c. REEX or manually setting lines
d. Specific work in the proximity of lines
   - Crossings. Status of crossed installations
   - Parallel lines. Double-circuit lines
e. Considerations for creating a work zone for tree-felling and pruning, painting, and other activities
f. Access to operational enclosures and electrical equipment casings
g. Work in the proximity area. Process and roles of participants
   - Applicant and requester
   - Installation manager

- Work supervisor
- Employees

5. **Measurements, tests and verifications**
   a. Equipment and usage methods
   b. General considerations for electrical risk prevention
   c. Conditions, standards, and organisational process for switching operations
      - Remote or teleoperated switching
      - Special situations. Load-buster, backup generators and islanding risk, overhead transformers, distance from switches to fuses
   d. Introduction to local switching
      - Switchgear operating sequence
      - Indications and signage
      - Lockouts and tagouts
6. **Working where hazardous atmospheres may be present**
   a. Area classification
      - Risk of fire or explosion
      - Risk of oxygen deficiency
      - Risk of toxic substances
   b. Equipment for detecting, measuring, and monitoring hazardous atmospheres
      - Work procedure. Considerations from Royal Decree 614/2001

2.7. ELECTRICAL RISK 1 (INITIAL AELĒC)

ELECTRICAL RISK 1 (INITIAL AELĒC) **(DURATION 6* HOURS)** **THEORY** **REFRESHER: 3* YEARS**	
INTENDED FOR: Any worker entering electrical installations (transformer stations, substations, switchgear/electrical panel rooms, alternator rooms, rectifiers, photovoltaic plants, etc.) to carry out work (cleaning staff, civil works, etc.) that does not fall under any of the Annexes of RD 614/2001 (live work, switching and testing, working near energised elements, or entering Work Areas where the 5 Golden Rules have been applied)	
COURSE APPLICABLE TO ->	
The content and the organisations providing the training must comply with those published in the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, the training identified as **"INITIAL OCCUPATIONAL SAFETY TRAINING IN THE ELECTRICITY SECTOR".** Details can be found on the AELĒC website (https://formacion.AELĒC.es) IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	**Staff HIRED by companies adhering to the AELĒC training standard**

2.8. ELECTRICAL RISK 2 LV LIVE WORK (QUALIFIED WORKER FOR LV LIVE WORK) CLIENT SOLUTIONS

ELECTRICAL RISK 2 CLIENT SOLUTIONS **LIVE WORK IN LV (QUALIFIED WORKER FOR LV LIVE WORK)** **(DURATION 6 HOURS)** **THEORETICAL – PRACTICAL** **REFRESHER: 3 YEARS**	
THEORY SECTION **1. Definition of Low Voltage Live Work (LV LW)** a. Fundamentals of low-voltage live work: • **Contact method with insulating protection on hands** b. General conditions to consider whether or not to perform LV live work **2. Main components of installations and their identification. The content must be tailored to the type of electrical installation in question, covering:** a. Conductors (cables, individual branch connections, etc.) b. Electrical panels (General Protection Panel, protection panels, etc.)	**Staff HIRED by EDP CLIENTES and EDP SOLAR (SEB2B/DISTRIBUTED GENERATION/MOBILITY)**

c. Specific equipment for the type of installation (inverters, photovoltaic panels, strings, batteries, chargers, etc.) d. Other commonly used electrical devices or components (circuit breakers, MCBs, RCDs, switches, etc.) e. Earthing system, etc. **3. Typical PPE and collective protection for LV work** a. Helmet and face shield b. Flame-resistant, insulating, and mechanical gloves c. Flame-resistant clothing d. Insulating stool and mat e. Vinyl mat **4. Execution procedures** **5. Most common LV work hazards and typical accidents** **PRACTICAL SECTION** It must be adapted to the type of installation and electrical equipment involved in the work, including at least one practical exercise on an electrical panel, covering: a. Creation of the live-line work zone b. Insulation of the worker with respect to ground and live components c. Use of personal protective equipment d. Absence of electrical load	

2.9. ELECTRICAL RISK 3 LV Live Work (QUALIFIED WORKER AUTHORISED FOR LV LIVE WORK) EXCEPT CLIENT SOLUTIONS

ELECTRICAL RISK 3 EXCEPT CLIENT SOLUTIONS **LIVE WORK IN LV (QUALIFIED AUTHORISED WORKER FOR LV LIVE WORK)** **(DURATION: 25/30 HOURS)** **THEORETICAL – PRACTICAL** **REFRESHER: 3 YEARS** **(DURATION: 6/10 HOURS)**	
1. General instruction for Low Voltage Works **General instruction for LV live work by UNESA-AMYS** In section 5. Training, the theoretical and practical training is specified, indicating that the initial **THEORETICAL-PRACTICAL** training must not be less than 20 teaching hours, with a recommended duration of around 25 to 30 hours. Section 5 states that regardless of the initial training every worker who is going to perform LV live work must receive, these workers will be required to take a theoretical-practical **REFRESHER Course** at least every THREE years, with a recommended duration of around 6 to 10 teaching hours.	**EXCEPT** **Staff HIRED by EDP CLIENTES and EDP SOLAR (SEB2B/DISTRIBUTED GENERATION/MOBILITY)**

2.10. ELECTRICAL RISK 4 HV LIVE WORK (QUALIFIED AUTHORISED WORKER FOR HV LIVE WORK)

ELECTRICAL RISK 4 **LIVE WORK IN HV (QUALIFIED AUTHORISED WORKER FOR HV LIVE WORK)** **(DURATION 160 HOURS)** **THEORETICAL – PRACTICAL** **REFRESHER: 1 YEAR** **(DURATION 8 HOURS)**
1. General Instruction for High Voltage Works **General instruction for HV live work by UNESA-AMYS** Section 4.4.2 Training, details the training and the number of both theoretical and practical hours. The **THEORETICAL-PRACTICAL** training for each HV live working method is recommended to last approximately 160 teaching hours, with 25% of the total time devoted to theoretical work and the remainder to practical training.

Section 4.4.4 Refresher training states that regardless of the initial training every worker who is going to perform HV live work must receive, these workers will be required to attend **REFRESHER Courses** at least once a year, with a recommended duration of around 8 hours.

2.11. AUTHORISED/INFORMED WORKER FOR "NON-ELECTRICAL" WORK NEAR ELECTRICAL INSTALLATIONS

AUTHORISED/INFORMED WORKER FOR "NON-ELECTRICAL" WORK NEAR ELECTRICAL INSTALLATIONS (DURATION 3 HOURS) THEORY
1.1 General aspects of electrical risk 1.1.1 Types of electrical accidents 1.1.1.1. Electric arc 1.1.1.2. Contact and current flow 1.1.1.2.1. Direct contact 1.1.1.2.2. Indirect contact 1.1.2 Effects of electric current on the human body 1.1.2.1. Factors on which it depends: 1.1.2.2. Current intensity 1.1.2.3. Duration of Electrical Contact 1.1.2.4. Resistance of the Human Body 1.1.2.5. Applied Voltage 1.1.2.6. Frequency of the Current 1.1.2.7. Path of the Current through the body 1.1.2.8. The Person's Reaction Capability **1.2 Personal protective equipment and collective protective equipment** 1.2.1. Individual and Collective Protective Equipment against electrical risk **1.3. Electricity distribution installations** 1.3.1. Description of transformer installations (buildings, outdoor switchyard, switchgear room, control room, and others) **1.4. Royal Decree 614/2001. Classification of the work** 1.4.1. Summary of the structure and contents of RD 614/2001 1.4.2. Classification of the work 1.4.3. Training of workers exposed to electrical risk **1.5. Working in proximity** 1.5.1. General Considerations 1.5.2. Description of certain types of work near live installations. 1.5.3. Preventive measures 1.5.4. Access to operational enclosures and electrical equipment casings

2.12. ELECTRICAL RISK 5 AELĒC NON-ELECTRICAL LV WORK (B1)

ELECTRICAL RISK 5 AELĒC NON-ELECTRICAL LV WORK (B1) (DURATION 5* H) THEORETICAL – DEMONSTRATIVE REFRESHER: 3* YEARS	
INTENDED FOR: Workers who carry out non-electrical activity in LV electrical installations, for which it is necessary to de-energise the installation in accordance with RD 614/2001 (LV only) or who must take some control measure to prevent risk (signage, equipment, etc.)	
The content and the organisations providing the training must comply with the contents of the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, the training identified as "**BASIC SAFETY TRAINING IN THE ELECTRICITY SECTOR. ELECTRICAL RISK (NON-ELECTRICAL ACTIVITY) IN ELECTRICITY DISTRIBUTION INSTALLATIONS (B1)".** Details can be found on the AELĒC website (https://formacion.aelēc.es) Workers who are trained in the electrical risk training courses C1 and C2 do not have to be trained in the B1 and B2 training courses respectively. Similarly, those who have received B	**Staff HIRED by companies adhering to the AELĒC training standard**

or C training, at any level, will not be required to undergo the "Initial Occupational Safety Training" provided for in the AELĒC Standard. IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	

2.13. ELECTRICAL RISK 6 AELĒC NON-ELECTRICAL MV/HV WORK (B2)

ELECTRICAL RISK 6 AELĒC **NON-ELECTRICAL MV/HV WORK AELĒC (B2)** **(DURATION 6* HOURS)** **THEORETICAL – DEMONSTRATIVE** **REFRESHER: 3* YEARS**	
INTENDED FOR: Workers who carry out non-electrical activity in LV and/or MV/HV electrical installations, for which it is necessary to de-energise the facility in accordance with RD 614/2001 (LV and/or MV/HV), or who must take some control measure to prevent risk (signage, equipment, etc.)	
The content and the organisations providing the training must comply with the contents of the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, the training identified as **"BASIC SAFETY TRAINING IN THE ELECTRICITY SECTOR. ELECTRICAL RISK (NON-ELECTRICAL ACTIVITY) IN ELECTRICITY DISTRIBUTION INSTALLATIONS (B2)".** Details can be found on the AELĒC website (https://formacion.aelēc.es) Workers who are trained in the electrical risk training courses C1 and C2 do not have to be trained in the B1 and B2 training courses respectively. Similarly, those who have received B or C training, at any level, will not be required to undergo the "Initial Occupational Safety Training" provided for in the AELĒC Standard. IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	**Staff HIRED by companies adhering to the AELĒC training standard**

2.14. ELECTRICAL RISK 7 AELĒC LV SWITCHING, VERIFICATION AND TESTING (C1)

ELECTRICAL RISK 7 AELĒC **LV SWITCHING, VERIFICATION AND TESTING (C1)** **(MINIMUM DURATION: 14* HOURS)** **THEORETICAL- PRACTICAL** **REFRESHER: 3* years**	
INTENDED FOR: • Workers who carry out electrical activity in LV electrical installations • Workers whose tasks involve installing, repairing, or maintaining LV electrical installations	
This training does not automatically qualify participants to carry out the listed activities. They may require specific supplementary training provided by each company in the sector	
The content and the organisations providing the training must comply with the contents of the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, with the training identified as **"BASIC OCCUPATIONAL SAFETY TRAINING IN THE ELECTRICITY SECTOR (ELECTRICAL ACTIVITY) IN LV, MV AND HV ELECTRICAL INSTALLATIONS (C1)".** Details can be found on the AELĒC website (https://formacion.AELĒC.es) Clarification of transitional period or exceptional situation 2025-2028. Persons who joined the contracts of the partner companies before 1 January 2025 and who have up-to-date training validated by the partner companies are eligible for the exceptional status. These persons must also have sufficient and appropriate experience for the activities to be carried out. This exceptional situation requires a responsible declaration, the details of which must be in accordance with the models published in the AELĒC standard. The acceptance of this exception will make it possible that, instead of doing the initial training of the C1 or C2 courses, they will be able to do the retraining of these courses at the time when it corresponds to them to update the training according to the periodicities of the standard that will begin to count from the date of delivery associated without the aelēc course taken.	**Staff HIRED by companies adhering to the AELĒC training standard**

This training must be renewed at the latest every 3 years, and in any case before 1 January 2028 Workers who are trained in the electrical risk training courses C1 and C2 do not have to be trained in the B1 and B2 training courses respectively. Similarly, those who have received B or C training, at any level, will not be required to undergo the "Initial Occupational Safety Training" provided for in the AELĒC Standard. IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	

2.15. ELECTRICAL RISK 8 AELĒC LV/HV SWITCHING, INSPECTION AND TESTING (C2)

ELECTRICAL RISK 8 AELĒC **LV/HV SWITCHING, VERIFICATION AND TESTING (C2)** **(MINIMUM DURATION: 22* HOURS)** **THEORETICAL- PRACTICAL** **REFRESHER: 3* years**	
INTENDED FOR: • Workers who carry out electrical activity in LV electrical installations • Workers whose tasks involve installing, repairing, or maintaining LV electrical installations • Workers whose electrical activity is carried out in LV and/or MV/HV electrical installations	
This training does not automatically qualify participants to carry out the listed activities. They may require specific supplementary training provided by each company in the sector	
The content and the organisations providing the training must comply with the contents of the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, with the training identified as "**BASIC OCCUPATIONAL SAFETY TRAINING IN THE ELECTRICITY SECTOR (ELECTRICAL ACTIVITY) IN LV, MV AND HV ELECTRICAL INSTALLATIONS (C2)".** Details can be found on the AELĒC website (https://formacion.aelēc.es) Clarification of transitional period or exceptional situation 2025-2028. Persons who joined the contracts of the partner companies before 1 January 2025 and who have up-to-date training validated by the partner companies are eligible for the exceptional status. These persons must also have sufficient and appropriate experience for the activities to be carried out. This exceptional situation requires a responsible declaration, the details of which must be in accordance with the models published in the AELĒC standard. The acceptance of this exception will make it possible that, instead of doing the initial training of the C1 or C2 courses, they will be able to do the retraining of these courses at the time when it corresponds to them to update the training according to the periodicities of the standard that will begin to count from the date of delivery associated without the aelēc course taken. This training must be renewed at the latest every 3 years, and in any case before 1 January 2028 Workers who are trained in the electrical risk training courses C1 and C2 do not have to be trained in the B1 and B2 training courses respectively. Similarly, those who have received B or C training, at any level, will not be required to undergo the "Initial Occupational Safety Training" provided for in the AELĒC Standard. IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	**Staff HIRED by companies adhering to the AELĒC training standard**

2.16. SWITCHING AGENTS "APPROVAL OF CONTRACTOR PERSONNEL FOR SWITCHING ON THE EDP ESPAÑA NETWORK"

SWITCHING AGENTS "APPROVAL OF CONTRACTOR PERSONNEL FOR SWITCHING ON THE EDP ESPAÑA NETWORK" **(MINIMUM DURATION: 40 HOURS)** **20 HOURS THEORY / 20 HOURS PRACTICAL on Overhead Networks, in Substations (CT's) or Switching Stations (CRs)**

TRAINING CONTENT FOR "APPROVAL OF CONTRACTOR PERSONNEL FOR SWITCHING ON THE EDP ESPAÑA NETWORK": Determined by the documentation specifically provided by EDP España **ACCREDITATION:** • Certificate confirming successful completion of the ""CONTRACTOR PERSONNEL APPROVAL FOR SWITCHING ON THE EDP ESPAÑA NETWORK" training, issued and stamped by the training organisation that delivered it. • Certificate of "SUPERVISED SWITCHING OPERATIONS ON THE EDP ESPAÑA DISTRIBUTION NETWORK". This certificate must be signed and stamped by the head of the EDP España Operations and Maintenance Department or a person delegated by them.	**Applicable to ELECTRICAL NETWORKS**

2.17. DISCHARGE AGENTS, WORK FOREMEN, WORK SUPERVISORS "APPROVAL OF CONTRACTOR PERSONNEL FOR DISCHARGES IN EDP ESPAÑA"

DISCHARGE AGENTS, WORK FOREMEN, WORK SUPERVISORS "APPROVAL OF CONTRACTOR PERSONNEL FOR DISCHARGES AT EDP ESPAÑA" **(MINIMUM DURATION: 24 HOURS)** **12 HOURS THEORY / 8 HOURS PRACTICAL on Overhead Networks + 4 HOURS PRACTICAL in Substations**	
MINIMUM CONTENT OF THE TRAINING "APPROVAL OF CONTRACTOR PERSONNEL FOR DISCHARGES AT EDP ESPAÑA": • Interpretation of EDP ESPAÑA single-line diagrams. Cut-off and Branching Device Orthogonal Diagrams and diagrams of potential field-installed equipment • Description of EDP ESPAÑA's facilities technology and its associated equipment: – for outdoor and indoor substations – for overhead network equipment – cut-off and switching devices – switching interlocks – nameplate, data interpretation – protections and earthing – automation devices, command and control devices, reclosers – HV and LV fuses – LV panels • Applicable safety measures and resources in facilities • EDP ESPAÑA's Occupational Risk Prevention Manual, in particular the following chapters: – General aspects, electrical risk – Working on electrical installations – Work at height • Royal Decree 614/2001 on electrical risk. Golden rules • EDP ESPAÑA's Discharge Procedure: – Communication with the Cut-off and Branching Device, identification, vocabulary and definitions – Responsibilities – Protected zone – Work zone • Response to Accidents and Incidents during switching operations **ACCREDITATION:** Certificate confirming successful completion of the "APPROVAL OF CONTRACTOR PERSONNEL FOR DISCHARGES AT EDP ESPAÑA" training, signed by the instructor or training organisation. **ACCREDITATION OF EXPERIENCE:** 1. If intending to accredit the role of DISCHARGE WORK SUPERVISOR, a MINIMUM OF 2 YEARS demonstrable experience is required for the tasks in question 2. If intending to accredit the role of DISCHARGE WORK FOREMAN, a MINIMUM OF 2 YEARS demonstrable experience is required for the tasks in question 3. If intending to accredit the role of DISCHARGE AGENT FOR DISCHARGES, a MINIMUM OF 1 YEAR demonstrable experience is required for the tasks in question	**Applicable to ELECTRICAL NETWORKS**

2.18. ELECTROMAGNETIC FIELDS

ELECTROMAGNETIC FIELDS (DURATION 2 HOURS) THEORY
Implementation of Royal Decree 299/2016 of 22 July, on the protection of the health and safety of workers against hazards related to exposure to electromagnetic fields: 1. Electromagnetic fields and other concepts a. What electromagnetic fields (EMF) are b. What electromagnetic radiation is 2. Sources of electromagnetic fields 3. Health effects and safety risks of electromagnetic fields a. Direct effects b. Indirect effects c. Effects of long-term exposure d. Workers with particular risks 4. Risk assessments a. Legal requirements b. Exposure Limit Values (ELVs) and Action Levels (ALs) c. Risk assessment and determination of exposure d. Preventive measures

2.19. WORK AT HEIGHT 1. GENERAL MODULE

WORK AT HEIGHT 1. GENERAL MODULE (DURATION 8 HOURS) THEORETICAL- PRACTICAL REFRESHER: 3 YEARS	
Royal Decree 2177/2004 on minimum H&S provisions for the use by workers of work equipment in temporary work at height. 1. Definition of work at height 2. Identification of typical work-at-height scenarios: portable ladder, vertical ladders, scaffolding, and walkable roofs. 3. Basic concepts a. Anchor points b. Safety distance c. Fall factor d. Impact force 4. Protection systems a. Collective protections b. Horizontal and vertical lifelines, both fixed and temporary c. PPE: harness, lanyards, energy absorber, sliding fall arrest device, retractable fall arrest device, adjustable attachment element, helmet d. Features of PPE for work at height e. Correct use of PPE f. Suspension trauma g. Height access and positioning techniques h. Suspension trauma and use of stirrups 5. Practical exercises (adaptable according to business requirements) a. User-level inspection of personal fall protection equipment b. Use of personal protective equipment for work at height c. Installation and removal of temporary lifelines, both vertical and horizontal d. Basic climbing and descending techniques, and horizontal progression: rope, cable, or rail fall arresters, double-hook technique, use of retractable devices, use of telescopic poles, etc. e. Basic positioning and work restraint techniques f. Prevention of suspension trauma. Use of stirrups g. Knot tying	**EXCEPT** **Staff HIRED by companies adhering to the AELĒC training standard**

h. Safe use of portable ladders i. Safe use of scaffolding	

2.20. WORK AT HEIGHT 1. AELĒC GENERAL MODULE

WORK AT HEIGHT 1 AELĒC. GENERAL MODULE (DURATION 8 HOURS) THEORETICAL- PRACTICAL REFRESHER: 3 YEARS	
INTENDED FOR: Personnel carrying out various types of work (masonry, painting, repairs, maintenance, etc.) involving a fall risk of more than 2 metres at electrical sector facilities (facilities belonging to AELĒC member companies or those for which they hold maintenance and operation responsibilities) This includes work on transformers, roofs, and accessible structures with identified service areas and fixed protections intended for equipment maintenance	
The content and the organisations providing the training must comply with the contents of the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, the training identified as **"BASIC SAFETY TRAINING IN THE ELECTRICITY SECTOR. WORK AT HEIGHT. GENERAL MODULE".** Details can be found on the AELĒC website (https://formacion.aelēc.es) IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	**Staff HIRED by companies adhering to the AELĒC training standard**

2.21. WORK AT HEIGHT 2. FOR DISTRIBUTION TYPE INSTALLATIONS. ADDITIONAL MODULE

WORK AT HEIGHT 2 FOR DISTRIBUTION TYPE INSTALLATIONS. ADDITIONAL MODULE (DURATION 8 HOURS) THEORETICAL- PRACTICAL REFRESHER: 3 YEARS	
1. Working at height on supports, poles, and electrical towers 2. Prior verification of supports and structures 3. Collective and personal protection equipment specific to the electrical sector 4. Access and moving around on: a. Wooden supports and structures b. Concrete supports and structures c. Supports and metal structures: lattice towers and tubular towers 5. Positioning and suspended work on: a. Wooden supports and structures b. Concrete supports and structures c. Supports and metal structures: lattice towers and tubular towers 6. Evacuation and rescue a. Familiarity with evacuation and rescue equipment: manual and automatic descenders, rescue and evacuation kits b. Evacuation techniques c. Rescue techniques 7. Practical exercises: a. Climbing and descending techniques, and techniques for moving around on wooden, concrete, and metal electrical supports and poles. b. Positioning and suspended work techniques on electrical supports and poles c. Evacuation techniques: using automatic and manual descenders on wooden, concrete, and metal supports and structures d. Rescuing a person suspended from their fall-arrest system on wooden, concrete, and metal supports and structures	**EXCEPT** **Staff HIRED by companies adhering to the AELĒC training standard**

NOTE: To be eligible for this module, the worker must be certified as having completed the General Module for Work at Height 1	

2.22. WORK AT HEIGHT 2. AELĒC FOR ELECTRICAL DISTRIBUTION FACILITIES. ADDITIONAL MODULE

WORK AT HEIGHT 2. AELĒC FOR ELECTRICAL DISTRIBUTION FACILITIES. ADDITIONAL MODULE AT HEIGHT 1 AELEC **(DURATION 8* HOURS)** **THEORETICAL- PRACTICAL** **REFRESHER: 3 YEARS**	
INTENDED FOR: Personnel performing various work at height in electrical distribution or transmission facilities using climbing or rope techniques.	
The content and the organisations providing the training must comply with the contents of the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, the training identified as "**BASIC SAFETY TRAINING IN THE ELECTRICITY SECTOR. WORK AT HEIGHT - MODULE 2."** Details can be found on the AELĒC website (https://formacion.aelēc.es) In order to take course 2, it is compulsory to have previously completed the generic course. Exceptionally, the generic course may be validated for those persons who have received training of the same or longer duration, in person and with a content that includes the syllabus included in the generic course. This exceptional situation requires a responsible declaration, the details of which must be in accordance with the models published in the AELĒC standard. IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	**Staff HIRED by companies adhering to the AELĒC training standard**

2.23. WORK AT HEIGHT 3 FOR WORK ON ROOFS, SLOPED ROOFS, AND TERRACES

WORK AT HEIGHT 3 FOR WORK ON ROOFS, SLOPED ROOFS, AND TERRACES **(DURATION 16 HOURS)** **THEORETICAL- PRACTICAL** **REFRESHER: 3 YEARS**
Module 1 - Risks of working at height (Rescue at height) 1.1 Applicable regulations for work at height: • Definitions and general standards; Applicable legislation, UNE-EN standards, and NTP guidelines 1.2 Falls from height. General concepts • Fall Factor; Shock force; Fall distance and safety distance; Pendulum effect and harness syndrome and how to prevent it 1.3 Safety rules and measures for work on roofs, sloped roofs, and terraces: • Depending on roof types, tasks, load-bearing zones, weather conditions, signage and delimitation of work, load handling, etc. **Module 2 - Safety equipment** 2.1 Personal fall protection equipment and systems 2.1.1 Personal Fall Protection Systems (EN 363): ○ Restraint Systems; Support System; Fall Arrest Systems; Rope access system ○ Rescue system 2.1.2 Category III Personal Protective Equipment: ○ Fall arrest harnesses (EN 361), positioning harnesses (EN 358), and suspension harnesses (EN 813) ○ Connectors (EN 362); Lanyards (EN 354); Energy-absorbing lanyards (EN 355); Adjustable positioning systems (EN 358); Retractable fall arrest systems (EN 360) ○ Mobile fall arresters for flexible systems – rope/cable (EN 353-2); Mobile fall arresters for rigid systems – cable/rails (EN 353-1)

- Dynamic ropes (EN 892), semi-static ropes (EN 1891), and dual-rated ropes
- Auxiliary equipment
- Rescue equipment and devices
- Care, maintenance, and user-level inspection/checking of equipment (EN 365)

2.2 Collective protection systems

2.2.1 Temporary edge protection systems – TEPS (EN 13374):

- Class A; Class B; Class

2.2.2 Safety nets (EN 1263):

- System S; System T; System U; System V

2.2.3 Permanent guardrails (EN 14122-3):

- Freestanding; Fixed to the floor or parapet

2.2.4 Fall protection for translucent panels and skylights:

- Temporary; Permanent; Safe walkways

2.2.5 Walkways and step-overs (EN 14122-2 and EN 14122-3):

2.3 Anchor devices (EN 795)

- Type A – permanent; Type B – mobile or transportable; Type C – flexible horizontal anchor lines; Type D – rigid horizontal rails/tracks; Type E – ballast/counterweights

2.4 Evacuation and rescue systems for work at height:

- Self-rescue; Evacuation – Descent; Assisted Rescue on fragile roofs (industrial warehouses), on vertical access ladders, metal structures, etc.; Professional rescue

Module 3 - Access from ground level

3.1 Work with scaffolding:

- General risks; Preliminary considerations and Limitations; Safety systems; Use

3.2 Work with personnel lifting platforms:

- General risks; Preliminary considerations and Limitations; Safety systems; Use

3.3 Work on fixed and portable ladders:

- General risks; Preliminary considerations and Limitations; Safety systems; Use
- For building maintenance (DIN 18799-1); For permanent access to machinery (EN 14122-4)

Module 4 - Practical section (recommended at least 6 h)

4.1 Fitting, operation, and use of PPE

4.2 Access via scaffolding, ladders, etc.

4.3 Use of personnel lifting platforms

4.4 Tying basic knots

4.5 Working on roofs, sloped roofs, and terraces:

- Use of horizontal lifelines EN795-C; Use of temporary lifelines EN 795-B; Use of rope fall arresters EN 353-2; Use of retractable fall arresters EN 360 12
- Use of fixed and temporary vertical lifelines EN353; Use of positioning devices EN 358

4.6 Lifting of loads:

- Hoists and counterweights

4.7 Rescue on roofs, sloped roofs, and terraces:

- Required equipment, guidelines, and procedures
- Freeing a casualty; Evacuation of a casualty

NOTE 1: This course is required in order to access roofs, sloped roofs, and terraces **that present a *fall risk to a lower level* (due to fragility; absence of a perimeter parapet or insufficient parapet height; absence of collective protections that prevent any fall risk to a lower level, thus requiring the use of PPE and fall protection systems; difficulty or unsafe access; etc.). This course must be given by ANETVA or IRATA accredited trainers and/or entities.**

2.24. WORK AT HEIGHT 4 FOR INSTALLING ANCHORS AND TEMPORARY LIFELINES

WORK AT HEIGHT 4 FOR INSTALLING ANCHORS AND TEMPORARY LIFELINES (DURATION 8 HOURS) PRACTICAL REFRESHER: 3 YEARS

1. Minimum indicative (non-exhaustive) content:
   a. Description and types of anchors
   b. Installation of chemical anchors
   c. Installation of mechanical anchors
   d. Installation of structural anchors
   e. Approvals and UNE 795 standards
   f. Base materials
   g. Field of application
   h. Inspection, measuring, and testing
   i. Description and installation of temporary horizontal and vertical lifelines
   j. Tensioning lifelines.
   k. Accessories compatible with lifelines

NOTE 1: To be eligible for this module, the worker must already be certified as having taken the Work at Height 5 course.

NOTE 2: Required for <u>at least one</u> member of the team, i.e., the person in charge of installing and supervising the condition and use of fall-arrest components set up in any work where roofs, sloped roofs, or terraces are accessed without safe entry or exit, or that are non-walkable, or that have no parapet, or a parapet lower than 90 cm, and no properly installed collective protections to eliminate the fall risk.

2.25. WORK AT HEIGHT 5. INSTALLATION OF COLLECTIVE PROTECTIONS

WORK AT HEIGHT 5. INSTALLATION OF COLLECTIVE PROTECTIONS (DURATION 8 HOURS) THEORETICAL- PRACTICAL REFRESHER: 5 YEARS
MINIMUM CONTENT: 1. Anchors 2. Safety nets 3. Metal Netting 4. Guardrails 5. Certifications 6. Practical exercises

2.26. HANDLING CHEMICAL PRODUCTS

HANDLING CHEMICAL PRODUCTS (DURATION 3 HOURS) THEORY REFRESHER: 5 YEARS
1. Risks and measures to be taken 2. Classification of the chemicals used 3. Types of chemical handling: • Unloading tankers: – with air – with gravity – with pump – ADR requirements for unloading tankers. Checklist review • Handling IBCs • Handling 25L jerrycans • Handling bags • Collective protection equipment • PPE: Personal protective equipment

2.27. HANDLING FIXED ELECTRICAL SWITCHGEAR CONTAINING FLUORINATED GREENHOUSE GASES (SF6)

HANDLING FIXED ELECTRICAL SWITCHGEAR CONTAINING FLUORINATED GREENHOUSE GASES (SF6) (DURATION 18 HOURS) THEORETICAL- PRACTICAL
1. Basic knowledge of environmental issues (climate change, Kyoto Protocol, global warming potential, etc.), as well as Regulation (EU) 517/2014 of the European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases and its implementing regulations 2. Physical, chemical, and environmental properties of sulphur hexafluoride (SF6) 3. Health effects of SF6 decomposition products 4. Uses of SF6 in electrical equipment (insulation, arc cooling, etc.) and understanding of electrical equipment design 5. Quality, quality control, and sampling of SF6 as per industrial standards 6. Storage and transport of SF6 7. Handling SF6 extraction and recovery equipment, and operating sealed drilling systems 8. Recovery, blending, purification, and reuse of SF6, plus different reuse categories 9. Working in open compartments with SF6, SF6 detectors 10. Neutralising SF6 by-products 11. End of life for equipment with an SF6 atmosphere 12. Tracking SF6 and keeping required records under national or EU law or international agreements 13. Leak reduction and leak checks 14. Alternative technologies to replace or reduce the use of fluorinated greenhouse gases and how to handle them safely Safety conditions for handling these technologies

2.28. EXPLOSIVE ATMOSPHERES

EXPLOSIVE ATMOSPHERES (DURATION 2 HOURS) THEORY REFRESHER: 5 YEARS
1. Applicable regulations: RD 681/2003 2. ATEX installations 3. Flammability limits 4. Ignition sources 5. Zone classification 6. DOPEX document 7. Prevention and protection against explosive atmospheres 8. Classification of electrical equipment for ATEX atmospheres

2.29. CONFINED SPACES

CONFINED SPACES (DURATION 8 HOURS) THEORETICAL- PRACTICAL REFRESHER: 3 YEARS
1. Definition and types of confined spaces a. Definition of a confined space • General legislation • Specific legislation • Work permits for confined spaces b. Types of confined spaces • Service tunnels • Storage tanks and chambers • Underground transformer stations • Boilers • Process and/or chemical storage tanks/cisterns

- Other facilities

2. PPE, collective protective equipment, and safety equipment
   a. Minimum required protection for confined-space work
3. Risks of working in confined spaces
   a. General risks when accessing confined spaces
   b. Specific risks in confined spaces
      - Asphyxiating atmospheres.
      - Toxic atmospheres.
      - Flammable atmospheres
4. Preventive measures for confined-space work
5. Required documentation
      - Work permit
      - Work procedure
6. Appointment and duties of the Prevention Officer
7. General preventive measures
8. Specific preventive measures
      - Evaluation of the internal atmosphere
      - Preventive measures in hazardous atmospheres
      - Ventilation
      - Respiratory protection equipment
      - Communication with the outside
9. Action in the event of an emergency
   a. Procedure to follow in an emergency
      - Rescue from outside
      - Emergency access to the inside of a confined space
   b. Rescue and evacuation equipment
   c. Use of rescue and respiratory protection equipment
10. Practical exercises
   a. Applying ventilation and techniques to check its effectiveness
   b. Measuring interior atmospheres with multi-gas detectors.
   c. Accessing confined spaces via vertical and horizontal manholes
   d. Action in an emergency; rescuing an injured worker
   e. Use of self-contained breathing apparatus
   f. Evacuation and fire-fighting in zero-visibility enclosures
   g. Actions in confined spaces classified as ATEX zones

2.30. AELĒC CONFINED SPACES

AELĒC CONFINED SPACES **(DURATION 8* HOURS)** **THEORETICAL- PRACTICAL** **REFRESHER: 3* YEARS**	
The content and the organisations providing the training must comply with the contents of the "AELĒC Certified Occupational Risk Prevention Training Standard" and, in particular, the training identified as **"BASIC SAFETY TRAINING IN THE ELECTRICITY SECTOR. WORK IN CONFINED SPACES".** Details can be found on the AELĒC website (https://formacion.aelēc.es) IMPORTANT NOTE: * This information is linked to AELĒC website publications, which will take precedence over what is stated here if the data differ.	**Staff HIRED by companies adhering to the AELĒC training standard**

2.31. WORK WITH ASBESTOS RISK

WORK WITH ASBESTOS RISK **(DURATION 2 HOURS)** **THEORY**

Royal Decree 396/2006 laying down the minimum health and safety requirements applicable to work with asbestos exposure risk

1. Properties of asbestos and its health effects, including the synergistic effect of smoking
2. Types of products or materials that may contain asbestos
3. Operations that may involve asbestos exposure and the importance of preventive measures to minimise exposure
4. Safe professional practices, controls, and protective equipment
5. Function, choice, selection, appropriate use, and limitations of respiratory equipment; if applicable, depending on the type of equipment used, the ways and methods to check the proper functioning of respiratory gear
6. Emergency procedures
7. Decontamination procedures
8. Waste disposal
9. Health monitoring

2.32. MANUAL HANDLING OF LOADS

MANUAL HANDLING OF LOADS
(DURATION 2 HOURS)
THEORETICAL- PRACTICAL
REFRESHER: 5 YEARS

1. Definitions. Accident rate. Basic regulatory framework
2. Musculoskeletal risks related to the workplace. Forced postures. Repetitive movements
3. Specific preventive measures: lifting manhole covers and plates in underground substations, etc.
4. Handling of loads

2.33. FORKLIFT OPERATION AND LOAD LIFTING

FORKLIFT OPERATION AND LOAD LIFTING
THEORETICAL- PRACTICAL
REFRESHER: 5 YEARS

Aligned with the content of the UNE 58451 standard

6. CONTENT OF THE TRAINING

6.1 GENERAL TRAINING

6.1.1 THEORETICAL TRAINING CONTENT

a. Information about the forklift to be used
b. General awareness of risks, accidents, occupational safety, etc.
c. Basic commonly used concepts
d. Basic legislation (insurance and liabilities), including knowledge of this standard
e. Symbols and pictograms
f. General description of the machine parts and the equipment used, including terminology. Key differences compared to a car
g. Common controls on the machine
h. Implications of the working environment (emissions, noise level, electromagnetic compatibility, hazardous atmospheres, etc.), condition of floors and ground, reinforced flooring, doors, service lifts, ramps and slopes, electric cables, loading bays. Conditions of workplaces according to Royal Decree 486/97
i. Refuelling operations: diesel, petrol, gas, battery charging
j. Typical daily operations of the machine
k. Rated load, allowable load, load centre, lifting height, boom reach, load charts
l. Stability of the unit. Factors affecting stability, wheel and tyre types, speed, steering types. Use on ramps
m. Driving empty and loaded, travel speed, steering types, turning radius, braking
n. Lifting operations, load limitations based on lifting height due to use of accessories. Visibility
o. Use of special accessories for certain load units. Impact on allowable load capacity
p. Oscillating loads or loads with a shifting centre of gravity
q. Lifting people. Limits and constraints depending on usual or exceptional use
r. Types of racks, storage systems
s. Aisles for manoeuvring, mixed traffic with pedestrians
t. Use on public or shared roads
u. Daily start-up checks, visual/functional checks: brakes, horn, etc.
v. Typical preventive maintenance: wheels, fluid levels

w. Operator manuals provided by the equipment manufacturer
x. Personal protective equipment, depending on area or type of work
y. Parking the machine in a parking area
z. Procedures to follow in a hazard situation, operator restraint, seat belt usage, etc.

6.1.2 PRACTICAL TRAINING CONTENT

a. Familiarity with machine parts, visual inspection of features, maintenance, controls, data plates, manuals
b. Start-up checks: steering, brakes, horn, etc.
c. Manoeuvres with no load, travel in both directions, speeds, turning, braking, use on ramps
d. Similar manoeuvres with load
e. Loading and unloading trucks, placing and removing loads on racks, stacking and removing loads on open floor space
f. Load chart, checking the effect of load dimensions
g. With accessories such as clamps, containers, hoisting booms, etc.
h. Special manoeuvres, such as loads of unusual dimensions or characteristics due to length or shape, or handling one load simultaneously with two forklifts, etc.

6.2 SPECIFIC TRAINING DEPENDING ON THE TYPE OF HANDLING FORKLIFT

TYPE 1

– Pallet trucks and similar vehicles with lift operations below 0.5 m
– Carrier trucks and tractors with no lifting operations
– Stackers

TYPE 2

– Mast forklifts with cantilever loads
– Telescopic boom forklifts
– Reach forklifts
– High-lift warehouse trucks, including those where the operator is raised together with the load. High-level order pickers
– Truck-mounted forklifts
– Other types and working conditions to be specified

7. DURATION OF FACE-TO-FACE TRAINING

The duration of the initial training period must be at least as specified in the table:

	THEORETICAL TRAINING		PRACTICAL TRAINING
	COMMON	SPECIFIC/TYPE	
TYPE 1	2 HOURS	2 HOURS	MINIMUM 2 HOURS. RATIO 0.5 H/PARTICIPANT
TYPE 2		4 HOURS	MINIMUM 4 HOURS. RATIO 1 H/PARTICIPANT

The update **(REFRESHER TRAINING)** must be carried out every five years.

The duration of the update (**REFRESHER TRAINING**) period must be at least as specified in the table:

	THEORETICAL TRAINING		PRACTICAL TRAINING
	COMMON	SPECIFIC/TYPE	
TYPE 1	1 HOUR	1 HOUR	MINIMUM 1 HOUR. RATIO 0.25 H/PARTICIPANT
TYPE 2		2 HOURS	MINIMUM 2 HOURS. RATIO 0.5 H/PARTICIPANT

9 CERTIFICATION OF COMPETENCE

An operator of work equipment who has received sufficient training for its use must hold a certificate confirming successful completion of the tests.

The certificate must include:

- name of the training organisation and/or the trainers who delivered it
- the type of handling forklifts and the workplaces for which this training is deemed valid
- any limitation considered appropriate to include, whether due to special circumstances regarding the operator being assessed or other issues deemed of particular interest
- details of the training received, its duration, and the place and dates when it was delivered
- expiry date

2.34. MOBILE ELEVATING WORK PLATFORM OPERATION

MOBILE ELEVATING WORK PLATFORM OPERATION
THEORETICAL- PRACTICAL
REFRESHER: 5 YEARS

Aligned with the content of the UNE 58923 standard

5 TRAINING PROGRAMME

5.1 BASIC THEORETICAL TRAINING CONTENT

a) legislation and regulations on the use of this work equipment
b) classification and types of MEWPs (Mobile Elevating Work Platforms)
c) features and descriptions of MEWPs
d) applications
e) safety before starting up the equipment
- inspections prior to commencing work
- positioning
- levelling, stability
- checking the equipment

f) control stations
- accessing the control stations
- types of control

g) working environment
- area where the work is carried out
- signalling the manoeuvre
- areas close to power lines

h) levelling
- with/without outriggers

i) main hazards and risk factors
- positioning of outriggers
- ground failure
- exceeding maximum capacity
- wind effect
- people falling due to equipment failure, hydraulic failure, mechanical issues, etc.
- people falling due to improper use
- collisions with objects
- limb entrapment
- accidental contact with electricity
- travelling movement of MEWPs

j) protection and prevention measures
- equipment safety systems
- indicators
- limiters
- emergency stop
- familiarisation

k) safety rules related to other risks
- burns
- noise
- gas inhalation

l) start-up
- intended uses
- safety and rescue systems

m) specific safety rules for use
n) safety rules after finishing work
- securing the MEWP against unauthorised use
- transport

o) personal protective equipment
p) maintenance
q) inspections

5.2 BASIC PRACTICAL TRAINING CONTENT

the operator must carry out actual movements with the type of MEWP for which certification is sought, covering at least the following content:

- introduction to the machine
- assessing the environment and marking the work area
- external visual inspection of the machine
- main components: identification and function
- checks and pre-use inspection, in line with the manufacturer's instruction manual
- machine start-up and shut-down
- correct operating procedures for each safety function
- manoeuvring the machine on a practice course (see annexes B, C, and D)
- rescue and emergency lowering procedures
- correct procedure for parking the machine in its transport position

6 TYPES OF CERTIFICATES

Once the operator has passed the **theoretical and practical assessment** covering the requirements of chapter 5 of this standard, a **CERTIFICATE shall be issued** by the training organisation certified under this standard, confirming the operator's competence for the types of MEWP used in the practical part.

7.2 COURSE DURATION

The minimum duration of the training, in all cases, must have the following structure:

– **THEORY TRAINING**: It may be delivered face-to-face or by e-learning with a minimum duration of four hours, and with a face-to-face examination for both types of training.

– **PRACTICAL TRAINING**: For each type of certificate, it consists of two parts:

1- GROUP EXPLANATION AND DEMONSTRATION OF EQUIPMENT OPERATION, WITH A MINIMUM OF 15 MIN. PER CATEGORY

2- PRACTICAL SESSION FOR EACH STUDENT OF AT LEAST TWENTY MINUTES

8 CERTIFICATE RENEWAL

8.1 FOR THE OPERATOR

MEWP operator certificates are **VALID FOR FIVE YEARS** from the date of issue, and may be **RENEWED FOR FURTHER FIVE-YEAR PERIODS**.

The renewal course will be delivered by a certified organisation.

In all cases, the **DURATION OF THE RENEWAL TRAINING** must have the following structure:

– THEORY TRAINING: It may be delivered in person or via e-learning, with a minimum duration of two hours, including a face-to-face theoretical assessment.

– PRACTICAL ASSESSMENT: This is carried out per student and for each certificate type.

2.35. OVERHEAD CRANE OPERATION

OVERHEAD CRANE OPERATION
(DURATION 5 HOURS)
THEORETICAL- PRACTICAL
REFRESHER: 5 YEARS

Aligned with the content of the UNE 58140 standard

5 TRAINING DELIVERY

The duration and content of the training must be sufficient to achieve the objectives.

The training must basically focus on the practical aspect of handling (at least **75%** of the training time).

Aligned with the content of NTP 737

TRAINING

OPERATOR TRAINING

CONTENT OF THE TRAINING

The training must include a theoretical programme and a practical programme.

The following topics must be included in the ***THEORETICAL PART***:

- The operator
- Skills and responsibilities
- Their role within the handling team
- Technology of lifting equipment: terminology and features. Mechanisms, operating principles, proper handling, etc. Electrical control equipment, button panel, operator cab, safety functions, controls and equipment. Slings:

types, materials, safety, use, upkeep and replacement. Safety devices: operating principles and controls. Specific lifting accessories: types, uses, upkeep and replacement

- Using lifting equipment and safety rules: start-up and shutdown procedures, beginning and end of the work shift. Prohibited or hazardous manoeuvres. Manoeuvring signalling codes. Limitations on the use of lifting equipment. Specific instructions relating to the machine's operation and/or the place where it is used. Daily checks
- Material handling: Load-gripping methods and devices. Practical usage rules. Manual guidance of loads. Loads: assessment, centre of gravity, balancing, wind influence. Most common handling operations. Handling loads with multiple machines
- Controls, maintenance, and breakdowns: Maintenance basics and fault detection. Regular checks and daily checks. Reporting operating defects. Action to take in the event of breakdown or power failure
- Instruction manual for the equipment to be used, technical data, rated capacity, safety devices, etc.
- Knowledge and operation of radio equipment for communication (if applicable)
- Operations manual covering three stages: before starting up the crane, during crane and load handling, and after completing work.

In the ***PRACTICAL PROGRAMME***, a crane as similar as possible to the one the operator will be using should be employed. If it is not identical, the differences must be clearly explained. This should include visual familiarity with the components, equipment, and accessories indicated in the theoretical programme, as well as:

- Handling exercises:
  - Use of controls, handling aids, and control devices
  - Carrying out manoeuvres (unloaded and loaded).
  - Handling loads with specific accessories
  - Slinging and load-guiding exercises
  - Combining manoeuvres (unloaded and loaded)
  - Controlling and reducing load swing
  - Signalling exercises for control (hand signals and radio, if applicable)
  - Coordination with the “signalman” when required

DURATION OF THE TRAINING COURSES

The duration of the initial courses will depend on the type of crane, the complexity of the loads to be handled, and each candidate’s initial experience.

The same criteria as above would apply to practical courses.

In addition to the aforementioned initial training, refresher courses should be scheduled to confirm that the operator’s acquired knowledge remains current, especially when the operator has been absent from the job for a long period. Additionally, refresher (renewal) courses should be held when there are changes in working conditions.

TRAINING ASSESSMENT

The knowledge acquired will be assessed through a competence exam. This assessment will consist of a theoretical part, using a set of multiple-choice questions, and practical exercises involving lifting, moving, and positioning loads of the standard type normally handled by the company.

2.36. OPERATING HOISTS

OPERATING HOISTS (DURATION 5 HOURS) THEORETICAL- PRACTICAL REFRESHER: 5 YEARS
1. Hoists. Definition, classification, and types. Main technical characteristics. Applications. Capabilities and limitations. 2. Maintenance of hoists, their tools, and accessories: a. Tools: slings, wire rope assemblies, shackles, hooks, and others. Applications and limitations b. Types of load. Weights and volumes. Calculating the estimated load weight c. Load stability 3. Main risks in load movement. Main preventive measures: Personal protective equipment Standardised symbols and signals for cranes and hoists in the work area

2.37. OPERATING TRUCK-MOUNTED ARTICULATED HYDRAULIC CRANES

OPERATING TRUCK-MOUNTED ARTICULATED HYDRAULIC CRANES
(DURATION 5 HOURS)
THEORETICAL- PRACTICAL
REFRESHER: 5 YEARS

Aligned with the content of NTPs 868 / 869

6. OPERATOR

Crane operation requires skill, knowledge, and experience. Allow only those who meet the following criteria to operate the crane:

- Physically and mentally fit (rested, not under the influence of alcohol, drugs, or medication)
- Capable of operating the crane responsibly
- Equipped with the necessary knowledge, training, and sufficient information to operate the crane and perform slinging (if applicable)
- Able to demonstrate they have received the necessary information to operate the crane and that they are familiar with the operator's manual for both the crane and any accessories

Crane operations involve great responsibility and should only be entrusted to capable individuals, free of physical contraindications (impaired vision or hearing, tendency to vertigo, other physical impediments, etc.), having quick decision-making and reaction skills, as well as the necessary technical knowledge.

In any case, there should be written evidence of the specific training received and, where appropriate, written authorisation from the employer to operate the relevant work equipment.

Therefore, proposed theoretical/practical content might be as follows:

1. Introduction
2. Types of articulated hydraulic cranes
3. Operating principles
4. Risks and risk factors
5. Safety rules for operators
6. Application of pre-start-up rules
7. Unloaded crane manoeuvres
8. Load handling
9. Signalman - crane operator

Final practical assessment

2.38. SLINGING OPERATIONS

SLINGING OPERATIONS
(DURATION 3 HOURS)
THEORETICAL/ PRACTICAL
REFRESHER: 5 YEARS

1. Knowledge and use of slings and their WLL depending on:
   a. their composition
   b. the number of legs and their lifting angle
   c. the slinging method
   d. the sling-to-material dimensional ratio
   e. the geometry of the material
   f. knowing when to remove them from service
2. Knowledge of accessory tools and how to use them:
   a. shackles
   b. lifting eye lugs
   c. spreader beams/frames/gantries
   d. links
   e. corner protectors

2.39. OPERATING A TOWER CRANE

OPERATING A TOWER CRANE
THEORETICAL- PRACTICAL
REFRESHER: 5 YEARS

Aligned with RD 836/2003, of 27 June, which approves a new additional technical instruction "MIE-AEM-2" of the Regulations on lifting and handling equipment, concerning tower cranes for construction or other applications

Tower crane operator licence

1. Purpose and scope of application.

This annex is intended to regulate the requirements and procedure for obtaining a tower crane (crane operator) licence.

2. Tower crane operator licence.

Operating the tower cranes covered by this Supplementary Technical Instruction requires holding a tower crane operator licence. To obtain it, the procedure indicated in this annex shall be followed.

3. Requirements for obtaining the licence.

Obtaining the licence will require proof of compliance with the following requirements:

Be of legal age

Have the necessary knowledge to operate a tower crane

Pass a medical examination on visual acuity, sense of direction, balance and hearing acuity, as well as psychological aptitudes

To verify the knowledge required in the aforementioned section 2, one of the following options may be chosen:

The meeting of the following requirements:

Holding a compulsory secondary education diploma or a qualification deemed equivalent for employment purposes.

Completing a theoretical-practical course delivered by an authorised institution recognised by the competent authority of the autonomous community

Passing an exam administered by the competent authority of the autonomous community

Holding a vocational training qualification or a professional certificate included in the National Register of Professional Certificates, covering the subject matters under the Regulations on lifting and handling equipment, approved by Royal Decree 2291/1985 of 8 November, and under this Complementary Technical Instruction.

Holding a certification issued by a body accredited for personnel certification by ENAC or any other National Accreditation Body designated in accordance with Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008, setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93, pursuant to standard UNE-EN ISO 17024.

All accredited personnel certification bodies wishing to issue these certifications must include in their certification scheme an assessment system covering the minimum content listed in section 4 of this annex.

Having recognition for the professional qualification of tower crane operator obtained in another EU Member State, in accordance with Royal Decree 581/2017 of 9 June, transposing Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013, amending Directive 2005/36/EC on the recognition of professional qualifications, and Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System (IMI Regulation) into Spanish law.

4. Theory-practical course.

4.1 The theoretical-practical course referred to in the previous section shall have a **total minimum duration of 200 hours, split into a 50-hour theoretical module and a 150-hour practical module**, with the following syllabus:

Theory training:

Description of the tower crane and its components (profiles, cables, ballast, etc.)

Definition of a dismantlable tower crane. Classification. Structural composition. Boom

Stability ballast. Balancing counterweights. Conditions they must meet. Mass

Steel cables. Handling. Lubrication. Inspections. Replacement

Crane siting. Base level differences. Route. Proximity to buildings and power lines. Facilities with multiple cranes. Safety zone. Grounding

Crane safety elements. Limiters. Moment (torque) safety. Maximum load safety. Weathervaning

Stability conditions while in service and out of service

Rigid bracing. Flexible bracing

Operation and handling. Obligations and prohibitions. Knowledge and features. Load chart. Calculating charts

Maintenance and upkeep of the tower crane

Adjustment and commissioning

Basic legislation: regulations and UNE standards

Practical training:

Operating rules (allowed and prohibited manoeuvres)

Workplace safety rules

Carrying out daily and weekly safety and maintenance checks

Operating a tower crane
Operating of a self-erecting tower crane
4.2 Persons who, within one year, prove professional experience in operating a tower crane at the company where they gained that experience, shall be exempt from taking the standard practical module of the course. Professional experience shall be verified by accreditation from the company, and in such a case, they must additionally complete a 15-hour practical module. It will not be necessary to justify section 3.b) of this annex.
5. Recognised training organisations.
Entities that meet the following requirements may be recognised as accredited bodies to deliver the tower crane operator theoretical-practical course:
Have the minimum necessary means and resources, both human and material (competent staff, premises, crane parts, engines, cables, bearings, steel sections, installation and maintenance manuals, mechanical and electrical measuring instruments, and torque wrenches).
Possess dismantlable and self-erecting tower cranes, either owned or leased, for a minimum period equivalent to the duration of the course to be delivered, in proper working condition, for exclusive use by the accredited entity.
6. Issuance and validity of the licence.
6.1 The tower crane operator licence will be issued by the competent authority of the autonomous community once the applicant has proven fulfilment of the requirements set out in section 3 of this annex.
6.2 The licence will be **valid for five years, after which it may be renewed for equal periods, provided the requirement set out in** section 3.c) of this annex is fulfilled.

2.40. SELF-PROPELLED MOBILE CRANE OPERATION

SELF-PROPELLED MOBILE CRANE OPERATION
THEORETICAL- PRACTICAL
REFRESHER: 5 YEARS

Adapted to the content of R.D. 837/2003, of 27 June, approving the new amended and consolidated text of the supplementary technical instruction "MIE-AEM-4" of the Regulation on lifting and handling devices, referring to self-propelled mobile cranes

Self-propelled mobile crane operator licence
1. Purpose and scope of application
This annex aims to regulate the requirements and procedure for obtaining the self-propelled mobile crane operator licence.
2. Self-propelled mobile crane operator licence
...for assembling and operating the self-propelled mobile cranes referred to by this Supplementary Technical Instruction, possession of a self-propelled mobile crane operator licence of at least the same or higher category than its rated capacity will be required.
The established licence is defined by the following categories:
Category A: qualifies the holder to assemble and operate self-propelled mobile cranes up to and including 130 t rated capacity.
Category B: qualifies the holder to assemble and operate self-propelled mobile cranes of more than 130 t rated capacity.
To obtain it, the procedure indicated in this annex shall be followed.
3. Requirements for obtaining the licence.
Obtaining the licence will require proof of compliance with the following requirements:

1. Be of legal age
2. Have the necessary knowledge to operate a tower crane
3. Pass a medical examination on visual acuity, sense of direction, balance and hearing acuity, as well as psychological aptitudes

To verify the knowledge required in the aforementioned section 2, one of the following options may be chosen:

a) The meeting of the following requirements:
   i Holding a compulsory secondary education diploma or a qualification deemed equivalent for employment purposes.
   ii Completing a theoretical-practical course delivered by an authorised institution recognised by the competent authority of the autonomous community
   iii Passing an exam administered by the competent authority of the autonomous community

b) Holding a vocational training qualification or a professional certificate included in the National Register of Professional Certificates, covering the subject matters under the Regulations on lifting and handling equipment, approved by Royal Decree 2291/1985 of 8 November, and under this Complementary Technical Instruction.

c) Holding a certification issued by a body accredited for personnel certification by ENAC or any other National Accreditation Body designated in accordance with Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008, setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93, pursuant to standard UNE-EN ISO 17024. All accredited personnel certification bodies wishing to issue these certifications must include in their certification scheme an assessment system covering the minimum content listed in section 4 of this annex.

d) Having recognition for the professional qualification of tower crane operator obtained in another EU Member State, in accordance with Royal Decree 581/2017 of 9 June, transposing Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013, amending Directive 2005/36/EC on the recognition of professional qualifications, and Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System (IMI Regulation) into Spanish law.

4. Theory-practical course

The course referred to in paragraph ii of the preceding section shall consist of a theoretical training module and a practical training module, with the following duration and content, according to the category:

***a)* Duration:**

Category	Theoretical training (hours)	Practical training (hours)	Total training (hours)
A	75	225	300
B	150	300	450

For these purposes, holders of a Category A self-propelled mobile crane operator licence who wish to obtain a Category B licence shall be credited with the theoretical and practical training time allocated to Category A. They must complete the remaining period of practical training on self-propelled mobile cranes with a rated load in Category B.

b) Theoretical training:

- Applicable regulations (Regulations on lifting and handling equipment, Supplementary Technical Instruction "MIE-AEM-4", and UNE standards)
- Description of the self-propelled mobile crane and its components (boom, jib extension, outriggers, cab and accesses, hooks, cables, etc.). General operation
- Types of self-propelled mobile cranes. Classification. Differences between telescopic cranes and lattice boom cranes
- Basic knowledge of strength of materials (forces, moments, stability). Centre of gravity, tipping moment. Calculating weights. Welds. Steel sections (angles, squares, rounds)
- Basic electrical knowledge (effects, protection)
- Basic maintenance concepts. Oil and water levels. Tyre pressure. Injection equipment and pumps. Mechanical, electrical, or hydraulic operating systems. Cooling, lubrication, and brake systems
- Safety devices on self-propelled mobile cranes (load indicator and limiter, radius indicator, motion limiters, etc.). Safety coefficients
- Assembling and disassembling self-propelled mobile cranes. Boom extension mechanisms. Special assembly procedures (lattice cranes, jibs, etc.)
- Positioning the crane in the work area (general overview of surroundings, slopes, power lines, underground utilities, ground bearing capacity, etc.)
- Lifting tackle: choosing the most appropriate method, upkeep and maintenance (steel slings, chains, polyester slings, shackles). Inspections and marking. Methods of slinging the load. Special tools (outriggers)
- Standard operations with the crane (slinging, levelling, interpreting load charts, signals, etc.). Prohibited manoeuvres
- Special crane operations (pile driving, lifting a load with multiple cranes, travelling with the crane fully assembled and extended, lifting a load without outriggers, demolition with a wrecking ball). Indoor precautions
- Crane operations near hazards (slopes, overhead power lines, airports, railways, roads, industrial process plants, etc.)
- Daily, weekly, and six-monthly inspections. Maintenance and upkeep of the self-propelled mobile crane (hoisting system and vehicle). Inspection of steel cables and replacement, checking the hydraulic system and one-way valves
- Duties and responsibilities of the self-propelled mobile crane operator, the rigger/slinger, and the lift supervisor
- Occupational risk prevention: operational safety. Wind safety. Signage. Travelling with loads. Control of safety measures. Work equipment

c) Practical training:

- Familiarisation with the crane. Explaining the start-up procedure for operating from the structure. Movements from the rotating structure, both unloaded and loaded

- Operating rules (allowed and prohibited manoeuvres). Signals
- Carrying out daily and weekly safety checks
- Operations using safety systems. Use of the crane's electronic control system ("on-board computer")
- Crane maintenance: various lubrication points, checking oil levels, cleaning, etc.
- Exercises to stabilise the crane on different types of terrain. Travelling with the crane extended, both loaded and unloaded
- Jib extension assembly and its use
- Training in load handling: simulating tower crane assembly, tilting or lifting a cement silo, concrete pouring with a bucket, unloading pallets of bricks, etc.
- Slinging practice: recognising different types of wire rope assemblies, slings, shackles, chains, hooks, and their correct use
- Road driving: mountain passes, steep and extended gradients, etc.
- "Off-road" driving: use of low-range gears and differentials
- Identifying different types of terrain
- Workplace safety rules

6. Issuance and validity of the licence

6.1 **The self-propelled mobile crane operator licence will be issued by the competent authority of the autonomous community, once the applicant has proven having acquired the knowledge through one of the routes set forth in section 3 of this annex, as well as the requirements set out in that section.**

6.2 The licence will be **valid for five years, after which it may be renewed for five-year periods, provided the requirement set out in section 3.3** of this annex is met.

In addition, for route (c) of knowledge demonstration through accredited personnel certification, the person's certificate must be valid at the time of licence renewal.

2.41. CHAINSAW OPERATION

CHAINSAW OPERATION (DURATION 4 HOURS) THEORETICAL- PRACTICAL REFRESHER: 5 YEARS
1. Safety devices and components
2. General recommendations
3. PPE, analysis of the appropriate level of protection for the specific equipment.
4. Transport of the chainsaw
5. Preparation for work
6. Start-up.
7. Basic work precautions (grip, posture, location, use)
8. Risks and preventive measures
9. Carrying out practical exercises for correct machine use

2.42. OPERATING A BRUSH CUTTER

OPERATING A BRUSH CUTTER (DURATION 4 HOURS) THEORETICAL- PRACTICAL REFRESHER: 5 YEARS
1. Safety devices and components
2. General recommendations
3. PPE, analysis of the appropriate level of protection for the specific equipment.
4. Transporting the brush cutter
5. Preparation for work
6. Start-up.
7. Basic work precautions (grip, posture, location, use)
8. Risks and preventive measures
9. Carrying out practical exercises for correct machine use

2.43. FORESTRY MACHINE OPERATOR

FORESTRY MACHINE OPERATOR
(DURATION 20 HOURS)
THEORETICAL- PRACTICAL

THE TRAINING CONTENT (for guidance) should be:

I. OCCUPATIONAL RISK PREVENTION IN FORESTRY WORK. CHARACTERISTICS OF THE SECTOR
1. Introduction to Occupational Risk Prevention
2. Characteristics of the sector
1.1. Features of forestry activity
1.2. Sector challenges
1.3. Description of the main tasks in timber harvesting

II. GENERAL RISK FACTORS IN TIMBER HARVESTING AND PREVENTIVE MEASURES. EMERGENCY MEASURES AND FIRST AID
1. General risk factors in timber harvesting and preventive measures
1.1. Working outdoors
1.2. Terrain conditions
1.3. Portable machinery
1.4. Forestry machinery
1.4.1. Forestry machinery operation
1.4.2. Maintenance of forestry machinery and traction equipment
1.4.2.1. Machinery maintenance
1.4.2.2. Tools, machines, and handling of items in the workshop
1.4.3. Moving forestry machinery
1.4.3.1. Travel on public roads
1.5. Ergonomic factors
1.6. Organisation of work
1.7. Forest fire
2. Emergency measures and first aid
2.1. Emergency plans
2.2. First Aid

III. SAFETY RULES FOR USING MACHINERY IN FORESTRY OPERATIONS. PERSONAL PROTECTIVE EQUIPMENT
1. Forestry machinery
1.1.1. The forestry tractor (skidder)
1.1.1.1. Features and safety elements
1.1.1.2. Safety rules to follow when using and operating forestry tractors
- Generic risk assessment for the position
- Auxiliary devices (machine attachments or work equipment...)
- Work equipment and tools: risks and preventive measures
- Maintenance and checks, manufacturer's manual, features of main components, safety devices, documentation, lifting systems, etc.
- Collective protective measures (installation, uses, obligations, and maintenance)

1.1.2. The harvester
1.1.2.1. Features and safety elements
1.1.2.2. Safety rules to follow in the use and operation of the machine
- Generic risk assessment for the position
- Auxiliary devices (machine attachments or work equipment...)
- Work equipment and tools: risks and preventive measures
- Maintenance and checks, manufacturer's manual, features of main components, safety devices, documentation, lifting systems, etc.
- Collective protective measures (installation, uses, obligations, and maintenance)

1.1.3. The autoloader
1.1.3.1. Features and safety elements
1.1.3.2. Safety rules to follow in the use and operation of the machine
- Generic risk assessment for the position
- Auxiliary devices (machine attachments or work equipment...)

- Work equipment and tools: risks and preventive measures
- Maintenance and checks, manufacturer's manual, features of main components, safety devices, documentation, lifting systems, etc.
- Collective protective measures (installation, uses, obligations, and maintenance

1.1.4.The chipper

1.1.4.1. Features and safety elements

1.1.4.2. Safety rules to follow in the use and operation of the machine

- Generic risk assessment for the position
- Auxiliary devices (machine attachments or work equipment...)
- Work equipment and tools: risks and preventive measures
- Maintenance and checks, manufacturer's manual, features of main components, safety devices, documentation, lifting systems, etc.
- Collective protective measures (installation, uses, obligations, and maintenance

1.1.5.The baler

1.1.5.1. Features and safety elements

1.1.5.2. Safety rules to follow in the use and operation of the machine

- Generic risk assessment for the position
- Auxiliary devices (machine attachments or work equipment...)
- Work equipment and tools: risks and preventive measures
- Maintenance and checks, manufacturer's manual, features of main components, safety devices, documentation, lifting systems, etc.
- Collective protective measures (installation, uses, obligations, and maintenance

1.1.6.The PTO-driven brush cutter

1.1.6.1. Features and safety elements

1.1.6.2. Safety rules to follow in the use and operation of the machine

- Generic risk assessment for the position
- Auxiliary devices (machine attachments or work equipment...)
- Work equipment and tools: risks and preventive measures
- Maintenance and checks, manufacturer's manual, features of main components, safety devices, documentation, lifting systems, etc.
- Collective protective measures (installation, uses, obligations, and maintenance

1.1.7.The "spider" excavator

1.1.7.1. Features and safety elements

1.1.7.2. Safety rules to follow in the use and operation of the machine

- Generic risk assessment for the position
- Auxiliary devices (machine attachments or work equipment...)
- Work equipment and tools: risks and preventive measures
- Maintenance and checks, manufacturer's manual, features of main components, safety devices, documentation, lifting systems, etc.
- Collective protective measures (installation, uses, obligations, and maintenance

2. Personal protective equipment (fitting, uses, obligations, and maintenance)

2.1. Forestry machinery operator

IV. SPECIFIC RISKS IN TIMBER HARVESTING TASKS. PREVENTIVE MEASURES

1. Preliminary actions
   - 1.1. Planning and organising forestry work
   - 1.2. Planning and inspecting the work area
   - 1.3. Organisation of work. Machine interference
   - 1.4. Auxiliary equipment

V. PRACTICE SESSIONS

1. Carrying out real-life practice with the various pieces of equipment covered in the training.

NOTE: this practical training does not grant full authorisation to operate the equipment. It is at the employer's discretion to determine the additional criteria needed for authorisation to use the machinery. In this regard, the practical exercises related to this training may be carried out internally using company resources. The training may be given by a specialist operator of the company in collaboration with the training organisation.

2.44. WORKERS IN THE CONSTRUCTION SECTOR

WORKERS IN THE CONSTRUCTION SECTOR

GENERAL COLLECTIVE BARGAINING AGREEMENT FOR THE CONSTRUCTION SECTOR

Mandatory for all activities within the construction sector.
Mandatory and generally applicable to all companies, entities, and workers in construction sector activities.
Applicable throughout Spanish territory.
Applicable to workers hired in Spain in the service of Spanish construction sector companies abroad.

COMPANIES, ENTITIES, AND WORKERS IN CONSTRUCTION SECTOR ACTIVITIES	MINIMUM Nº OF TRAINING HOURS	TYPE OF TEACHING
TRAINING CONTENT FOR THE FIRST TRAINING CYCLE **INITIAL TRAINING** **1.** Workers employed by companies falling within the scope of this Agreement and performing their activity on construction sites must at least have completed the initial training		
ALL	8	**FACE-TO-FACE** In order for the student to be deemed competent, attendance at the entire training course is mandatory. The passing the training action depends on passing a skills assessment test
TRAINING CONTENT BY JOB POSITION OR TRADE **SECOND TRAINING CYCLE** **1.** This includes the contents of the first or initial training **2.** Workers performing activities corresponding to any of the job positions or trades must complete the training required for the position or trade(s) they carry out **3.** In the second-cycle training by trade, it is noted that there is a common part and another specific part to be delivered to workers who carry out multifunctional and multidisciplinary activities **4.** Specific 6-hour training initiatives may be developed for each trade for those workers who have previously undertaken: • a complete 20-hour training course in one of the trades, • have basic-level construction safety and health training, or • are granted a recognition of equivalence for the 14-hour common part of training, in accordance with the stipulations **5.** Workers who carry out tasks corresponding to job positions or trades not specified in this Agreement must receive training suited to the risks and preventive measures associated with those tasks, following a structure similar to other trades set out in Annex XII, Section 2 of this General Agreement for the second-cycle training, and in line with Article 10.2 of Law 32/2006 of 18 October, which regulates subcontracting in the Construction Sector		
ALL		**FACE-TO-FACE** In order for the student to be deemed competent, attendance at the entire training course is mandatory. The passing the training action depends on passing a skills assessment test
TRAINING CONTENT BY JOB POSITION		
Company management personnel	10	**EXCEPTION:** 1. MIXED FACE-TO-FACE AND E-LEARNING: • In person: minimum 2.5 hours 2. Exceptionally: E-LEARNING
Site managers and technical supervisors	20	
Middle management	20	
Prevention officers	70	**EXCEPTION:**

		1. MIXED FACE-TO-FACE AND E-LEARNING: • Face-to-face: minimum of 20 teaching hours
Administrative staff	20	**EXCEPTION:** 1. MIXED FACE-TO-FACE AND E-LEARNING: • Face-to-face: minimum 5 hours
TRAINING CONTENT BY TRADE		
1) Masonry 2) Demolition and refurbishment works 3) Formwork 4) Rebar work 5) Plaster coating 6) Electricity, assembly, and maintenance of HV and LV electrical installations 7) Plumbing and air-conditioning installations 8) External coatings 9) Painting 10) Flooring and tiling 11) Lift equipment operators 12) Vehicle and earthmoving machinery operators 13) Manual equipment operators 14) Insulation and waterproofing works 15) Assembly of tubular structures 16) Temporary site facilities operator and auxiliary roles: asphalt, concrete, crushing, and aggregate classification plants 17) Stabilisation of embankments and laying pavements 18) Laying roofing materials 19) Road maintenance and operations 20) Tunnel construction and support for underground excavations and slopes 21) Special foundations, drilling, and boreholes 22) Construction and maintenance of railway tracks 23) Maritime works 24) Works on supply and sanitation networks and well-sinking 25) Concrete prefabrication assembly works on-site 26) Material workshop operator: industrial stone, material treatment or transformation, stonemasons, and similar 27) Welding works 28) Plasterer, installer of plasterboard, and similar 29) Machinery and vehicle maintenance 30) Archaeological works 31) Manufacturing and assembly of prefabricated components	20 **Common Part:** 14 teaching hours **Specific Part:** 6 teaching hours for each of the specific parts	.
TRAINING FOR SPECIFIC TASKS		
First aid training in emergency teams	4	**FACE-TO-FACE** Required for those workers who, within the emergency teams, are entrusted with first aid tasks In order for the student to be deemed competent, attendance at the entire training course is mandatory

		The passing the training action depends on passing a skills assessment test
Basic level of prevention in construction	60 (as of 06/09/2007, when the 4th General Collective Bargaining Agreement for the Construction Sector was signed, the basic-level training in this sector started to have a duration of 60 teaching hours)	**EXCEPTION:** 1. FACE-TO-FACE 2. MIXED FACE-TO-FACE AND E-LEARNING: • Face-to-face: minimum of 20 hours In all cases, to be deemed competent, the student must attend the entire training course The passing the training action depends on passing a skills assessment test

APPROVAL OF TRAINING ENTITIES

1. Both first and second cycle training, training for specific tasks and basic level training shall be provided by the "la Caixa" Foundation, either directly or through entities or companies that have obtained approval for training activities in occupational risk prevention, in accordance with the requirements established in the corresponding procedure set out in Annex XIV of this Agreement.
2. Entities that are constituted as external prevention services accredited by the labour authority, or companies within the scope of application of this Agreement that have their own preventive organisation, may apply for the approval of the training actions they plan to provide.
3. Entities planning to have these training actions approved by the "la Caixa" Foundation to provide training in occupational risk prevention, in accordance with the provisions of Chapter III of Title III of Book II of this Agreement, must meet the requirements established therein.
4. Accreditation procedure according to Article 165 and Annex XIV

PROFESSIONAL CONSTRUCTION CARD

1. A document issued by the Fundación Laboral de la Construcción (Labour Foundation for Construction - FLC), **serving as a means to accredit**, among other details, the worker's specific sector training in occupational risk prevention
2. Shows that the holder has received at least initial training in occupational risk prevention
3. Expires 5 years after issuance

EQUIVALENCES

RECOGNITION OF TRAINING EQUIVALENCES IN OCCUPATIONAL RISK PREVENTION	
Training included in this Agreement	**Validation relating to the preventive training specified in the 7th General Collective Bargaining Agreement for the Construction Sector**
Basic-level prevention training in construction	– Initial training – Site managers and technical supervisors – Middle management – Administrative staff – Common part for trades
Masonry training given in accordance with the criteria set out in the agreement prior to 26 September 2017	It validates the training for the installation of plaster, plasterboard, and similar.
Second-cycle training by trade	It recognises equivalence of the common part of any other trade
Training included in the Regulations on Prevention Services (modified by RD 337/2010), and in RD 1161/2001, as well as training indicated in the "Technical Guide" to RD 1627/1997	**Validation relating to the preventive training specified in the 7th General Collective Bargaining Agreement for the Construction Sector**
Higher-level or university master's training in Occupational Risk Prevention	– Initial training – Company management personnel – Site managers and technical supervisors – Middle management – Prevention officers – Administrative staff – Common part for trades – Basic level of prevention in construction

Intermediate-level training or Higher Technician VET in Occupational Risk Prevention (The official "Higher Technician in Occupational Risk Prevention" qualification regulated by Royal Decree 1161/2001 has the same validity for the purposes of these equivalences)	– Initial training – Company management personnel – Site managers and technical supervisors – Middle management – Prevention officers – Administrative staff – Common part for trades – Basic level of prevention in construction
Basic-level training in the construction sector	– Initial training – Site managers and technical supervisors – Middle management – Administrative staff – Common part for trades
Health and safety coordinator in construction works	– Initial training – Site managers and technical supervisors – Middle management – Administrative staff – Common part for trades

TRAINING INCLUDED IN THE STATE COLLECTIVE AGREEMENT FOR THE METAL SECTOR

The recognition of training received by workers under the State Collective Bargaining Agreement for the Metal Sector, provided it has been delivered by the (Labour Foundation for Construction - FLC) or by an entity whose training is approved by the FMF (Metal Foundation for Training, Qualification, and Employment) or the FLC, in accordance with the requirements established in their respective agreements, is outlined in the following table:

Preventive training included in Annex IV of the State Collective Bargaining Agreement for the Metal Sector	**Validation with regard to the training in occupational risk prevention specified in the VII CGSC**
First training cycle: Basic Level	First training cycle: Initial level
Company managers	Company managers
Managers and technical supervisors of the activity	Managers and technical supervisors of the activity
Middle management	Middle management
Administrative staff	Administrative staff
Rebar work	Rebar work
Electricity, concerning assembly and maintenance of HV and LV electrical installations	Electricity, assembly, and maintenance of HV and LV electrical installations
Plumbing and air-conditioning installations	Plumbing and air-conditioning installations
Lift equipment operators	Lift equipment operators
Manual equipment operators	Manual equipment operators
Insulation and waterproofing	Insulation and waterproofing
Assembly of tubular structures	Assembly of tubular structures
Construction and maintenance of railway tracks	Construction and maintenance of railway tracks
Machinery and vehicle maintenance work on construction sites	Maintenance of machinery and vehicles on construction sites
Basic-level prevention for metal activities in construction	Basic level of prevention in construction
Lift installation	This will produce an equivalence for the common part of trades in the construction sector
Installations, repairs, assemblies, metal structures, metal joinery and locksmithing	
Telecommunications installations	
Work on gas pipelines and combustible gas distribution networks	
Firefighting equipment installation works	

TRAINING INCLUDED IN THE STATE COLLECTIVE AGREEMENT FOR THE TIMBER SECTOR

The recognition of the training received by workers under the State Collective Bargaining Agreement for the Timber Sector, provided it was delivered by the Fundación Laboral de la Construcción (Construction Labour Foundation - FLC) or by an entity whose training has been approved by it, is listed in the following table:

FLMM (Labour Foundation for Wood and Furniture) Agreement training content	Training content under the General Agreement for the Construction Sector
Initial training (8 hours)	Permanent Classroom or initial level (8 hours)
Basic level training (50 hours. RD 39/1997)	Basic level training (60 hours. Since September 2007
Managers (10 hours)	Company managers (10 hours)
Managers and technical supervisors of the activity (20 hours)	Site managers and technical supervisors (20 hours)
Middle management (20 hours)	Middle management (20 hours)

In addition to the above, there are other types of equivalences expressly set out in various tables in the Agreement, which must be consulted if necessary. By way of illustration, these are:

1. Training included in vocational training qualifications and professional certificates
   - Table 1: Summary table of recognition
   - Table 2: Recognitions for the old vocational training qualifications (Organic Law on the General Organisation of the Education System and earlier) in the education system corresponding to the Professional Family of Building and Civil Works
   - Table 3: Recognitions for the new vocational training qualifications (Organic Law on Education) in the education system corresponding to the Professional Family of Building and Civil Works
   - Table 4: Recognitions for professional certificates under the Professional Family of Building and Civil Works
   - Table 5: Recognitions for professional certificates in other professional families.
   - Table 6: Recognitions for the old vocational training qualifications (Organic Law on the General Organisation of the Education System and earlier) in the education system corresponding to other professional families
   - Table 7: Recognitions for the new vocational training qualifications (Organic Law on Education) in the education system corresponding to other professional families
   - Table 8: Recognitions for old professional certificates and specialities of the public employment service
2. Training included in the General Regulations on Basic Mining Safety Standards

The equivalence for training included in Supplementary Technical Instruction 02.1.02, provided it has been delivered by the Construction Labour Foundation - FLC or by an entity whose training is approved by it, is listed in the following table:

- Recognition of training equivalence

2.45. METAL SECTOR WORKERS

METAL SECTOR WORKERS

STATE COLLECTIVE BARGAINING AGREEMENT FOR THE INDUSTRY, TECHNOLOGY AND SERVICES OF THE METAL SECTOR (CEM)

All companies and workers that conduct their activity in manufacturing, production, or transformation processes, as well as in assembly, repair, upkeep, maintenance, storage, or commissioning of industrial equipment and installations, related to the Metal Sector.

- Thus, **the following activities and products** are **included within the scope** of this Agreement: metallurgy and iron and steel industry; automotive and its components; shipbuilding and its auxiliary industry; aerospace industry and its components, as well as railway materials, components for renewable energies; robotics, home automation, automation and its programming, computers and their peripherals or auxiliary devices; printed and integrated circuits and similar articles; technological infrastructures; telecommunications and information technology equipment and technologies; and all kinds of mechanical, electrical, or electronic equipment, products and devices, including maintenance and manufacturing of unmanned systems, whether autonomous or remotely controlled (drones).
- **Also included in this scope** are companies dedicated to engineering, engineering technical services, analysis, inspection and testing, manufacturing, assembly and/or maintenance carried out in industry and power generation plants for electricity, oil, gas, and water treatment; likewise, companies engaged in the laying of energy transmission lines, cables and telephony networks, IT, satellite, railway signalling and electrification, electrical and instrumentation installations, air conditioning and industrial refrigeration, plumbing, heating; manufacturing,

installation, and assembly of security systems (anti-theft and fire) and other auxiliary and complementary activities of the Sector.

- Likewise, welding and bonding technologies, insulation, tower cranes, solar panels, and **activities** related to jewellery, watchmaking or costume jewellery are included; toys; cutlery and tableware; metal joinery; weapons; medical devices; optical and precision mechanical industry; lamps and electrical devices; conservation, cutting and replacement of metres; recovery and recycling of metallic secondary raw materials, as well as any other activities specific to and/or complementary to the Sector.
- Similarly, **the activities** of manufacturing, installation, maintenance, or assembly of industrial equipment, metal joinery, boiler-making, machining and automation, the lifting subsector, escalators, conveyor belts, and walkways included in the Sector or any other that requires such services, as well as the cleaning of industrial machinery, are also included.
- In the same way**, the Sector also encompasses activities** related to the repair of mechanical, electrical or electronic devices; maintenance and repair of vehicles; vehicle inspections (ITV), and auxiliary, complementary or related activities directly linked to the Sector.
- This Agreement will **also apply to the metal graphics industry** and the manufacture of metal packaging and cans, when sheet metal with thickness over 0.5 mm is used in their production.
- Furthermore, the **sector includes** the manufacturing, assembly, maintenance, and repair of facilities, elements, or components for the generation and/or distribution of electrical energy.
- Companies exclusively dedicated to the sale of items in the commercialization process **are excluded from the scope of this Agreement**.
- **All companies that, under any type of contract, have multiple main activities, of which at least one is included within the functional scope of this Agreement, will also be affected; this Agreement will apply to the workers who carry out those activities**.
- Companies that, under any type of contract, **habitually (not occasionally or in an ancillary manner)** carry out activities belonging to the Sector will also be subject to the functional scope of this Agreement, even if none of these activities are their main or prevailing activity.
- The previously mentioned activities included in the scope of this State Agreement are set out in **Annex I**. The **National Classification of Economic Activities listed in that Annex** are indicative and non-exhaustive, and may be expanded, reduced, or supplemented by the bargaining committee depending on changes in the National Classification of Economic Activities.
- In those workplaces related to vehicle maintenance and repair where such activity coincides with sales, the Collective Bargaining Agreement for the Metal Sector shall apply to the workers performing maintenance and/or repair activities.
- Applicable throughout Spanish territory.
- It will also affect workers hired in Spain in the service of Spanish companies abroad.

The following distinction is made:

A. Minimum training content in occupational risk prevention for metal sector workers whose activity is **NOT** carried out on construction sites

B. Minimum training content in occupational risk prevention for metal sector workers whose main activity is carried out on construction sites

C. Recognition of the training received by workers regarding the consideration of the workplace as a construction site, who carry out their activity in a different workplace, and vice versa

A. MINIMUM TRAINING CONTENT IN OCCUPATIONAL RISK PREVENTION FOR METAL SECTOR WORKERS WHOSE ACTIVITY IS NOT CARRIED OUT ON CONSTRUCTION SITES

WORKERS FROM METAL SECTOR COMPANIES WHO DO NOT CARRY OUT WORK ON CONSTRUCTION SITES	Nº OF TEACHING HOURS	TYPE OF TEACHING
Managers	*6*	*Face-to-face or e-learning*
Workers performing office tasks	*6*	*Face-to-face or e-learning*
Tradespeople in production and/or maintenance areas. Trade-specific training	*20 (12 core + 8 job-specific hours)*	*Face-to-face*

Workers with basic-level preventive roles (Prevention Representatives and Members of the Health and Safety Committee)	*50*	*Face-to-face (contents related to the workers' activity in production and/or maintenance areas, lasting 20 hours)* *The remaining hours up to a total of 50 may be delivered via e-learning*
Refresher training (every 4 years)	*4*	*Face-to-face* *(Managers and Office Staff may be trained via e-learning)*

Trades in the production area:

- C.1) National Economic Activities Classification no. 24 activities: among others, manufacturing, production, and transformation of iron, steel, and non-ferrous metals, and first-stage processing (steelmaking, metal casting, mould-making, tube manufacturing, and similar)
- C.2) National Economic Activities Classification no. 30.1 and 33.15 activities: shipbuilding, repair, and maintenance works in shipyards and docks
- C.3) For operators in forging works
- C.4) For operators in welding and oxyfuel cutting works
- C.5) For operators of machining machines by chip removal
- C.6) For operators of machining machines by abrasion
- C.7) For operators of metal forming and cutting machining machines
- C.8) For operators in metal part surface treatment activities: degreasing, cleaning, stripping, coating, painting
- C.9) For operators in pre-assembly, assembly, format change, and factory assembly activities
- C.10) For metal joinery works
- C.11) For operators in jewellery works
- C.12) For mechanical, maintenance, and repair works of machines, industrial equipment and/or electromechanical equipment (aerospace industry, etc.)
- C.13) For works in vehicle repair shops
- C.14) For installation works, maintenance, and repair of IT equipment, automation systems and their programming, computers and their peripherals or auxiliary devices; telecommunications and information technology equipment, and information and data networks (ICT)
- C.15) For installers and repairers of electrical lines and equipment
- C.16) For plumbing, heating-air conditioning installations, domestic hot water installations, and solar thermal installations
- C.17) For maintenance, repair, and installation works of lifts
- C.18) For insulation and waterproofing works
- C.19) For tubular structure assembly works
- C.20) For railway construction and maintenance works
- C.21) For installation works, maintenance, and repair works of telecommunications infrastructures (ICT and digitalisation)
- C.22) For works on gas pipelines and combustible gas distribution networks
- C.23) For works on other types of installations such as photovoltaic solar installations or wind power installations
- C.24) For works in the recovery and recycling of metallic secondary raw materials
- C.25) For quality control, verification, and inspection works on materials under manufacturing processes and finished products in the sector
- C.26) For drivers/carriers
- C.27) For forklift truck drivers
- C.28) For overhead crane operators
- C.29) For mobile elevating work platform operators
- C.30) For warehouse, logistics, and supply operators in manufacturing processes (including, among other activities, packaging, product preparation, reprocessing, with or without mechanical aids, and other tasks involving the supply and delivery of materials and components)
- C.31) For self-propelled mobile crane drivers.
- C.32) For activities not expressly regulated in this Agreement

NOTES:

1. In the event that the worker's **main activity consists of** several activities linked to different trades, the training module that covers the largest percentage or time of their role shall be provided, and the training content for the **various activities making up the general** duties of the job must be completed within 4 years.
2. **C.32) Training content for activities not expressly regulated in this Agreement:**

   2.1. The preventive training for activities not expressly regulated in this Agreement shall focus, among other aspects, on the risks of the activity and the corresponding preventive measures. In any case, for the design

and delivery of preventive training, the provisions for the core part and the specific part set out in sections C.1 and C.2 must be observed.

2.2. The minimum training content for activities not expressly regulated in this Agreement shall include the core part set out in section c) 3.1., lasting 12 hours, plus an 8-hour specific part in accordance with section c) 3.2, depending on the unregulated activity, and shall be delivered face-to-face.

3. In the event that a worker's main activity is comprised of multiple activities linked to different trades, **under the general outline of the refresher module**, the training must cover all the risks and preventive measures associated with them.

CLARIFICATION:
Given that the mandatory training requirements are described as MINIMUM training content, in specific cases for the following trades: *C.27) Forklift drivers / C.28) Overhead crane operators / C.29) MEWP operators / C.31) Self-propelled mobile crane drivers*, the training required here must be understood as MINIMUM, requiring, in each case, further specific training as provided in the corresponding module of these VALIDATION CRITERIA, TRAINING REQUIREMENTS FOR COORDINATION OF BUSINESS ACTIVITIES: CONTENTS:

- Forklift operation and load lifting
- Overhead crane operation
- Mobile elevating work platform operation
- Self-propelled mobile crane operation

B. MINIMUM TRAINING CONTENT IN OCCUPATIONAL RISK PREVENTION FOR METAL SECTOR WORKERS WHOSE MAIN ACTIVITY IS CARRIED OUT ON CONSTRUCTION SITES

WORKERS FROM COMPANIES THAT DO CARRY OUT WORK ON CONSTRUCTION SITES	Nº OF TEACHING HOURS	TYPE OF TEACHING
TRAINING CONTENT FOR THE FIRST TRAINING CYCLE: INITIAL LEVEL		
All	8	Face-to-face (Annex V)
TRAINING CONTENT ACCORDING TO THE POSITION. SECOND TRAINING CYCLE		
All		
Managers	10	ANNEXE V 1. Face-to-face 2. Mixed: • Face-to-face: 2.5 hours • E-learning: 7.5 hours 3. Exceptionally: e-learning
Managers and technical supervisors of the activity	20	Face-to-face
Middle management	20	Face-to-face
Prevention officers	50	NOT SPECIFIED
Administrative staff	20	ANNEXE V 1. Face-to-face 2. Mixed: • Face-to-face: 5 hours • E-learning: 15 hours
Training by job position or trade. Metal Sector activities on construction sites: • Rebar work • electricity, concerning assembly and maintenance of high and low voltage electrical installations • plumbing and air-conditioning installations • lift installation • lift equipment operators • manual equipment operators • installations, repairs, assemblies, metal structures, metal joinery and locksmithing • insulation and waterproofing works	20 The 20-hour training includes the 8-hour permanent classroom module	ANNEXE V Face-to-face The **6-hour specific training by trade** will be delivered face-to-face

• tubular structure assembly work • railway construction and maintenance works • machinery and vehicle maintenance work on construction sites • work on telecommunications installations • work on gas pipelines and combustible gas distribution networks		
Basic-level prevention for metal activities in construction	60	ANNEXE V 1. Face-to-face 2. Mixed: • Face-to-face: 20 hours (it will be equivalent to the First Cycle (8 hours) plus 14 hours of the Second Cycle. In this case, for recognition of the specific training related to a job position or trade in this Second Cycle, the worker must receive an additional 6 hours of face-to-face training) • E-learning
Refresher training (every 4 years)	4	ANNEXE IV MANDATORY for: • Technical staff • Administrative • Middle management • Trade personnel 1. Face-to-face 2. (administrative mode is supported in e-learning mode)

NOTES

1. In the event that a worker's main activity is comprised of multiple activities linked to different trades, **under the general refresher module scheme**, the training must cover all the risks and preventive measures associated with them.

In order to avoid **duplication in workers' training**, those who have received training regarding the consideration of the workplace as a construction site and carry out their activity in a different workplace, or vice versa, will have such training recognised in accordance with the following table.

C. RECOGNITION OF THE TRAINING RECEIVED BY WORKERS REGARDING THE CONSIDERATION OF THE WORKPLACE AS A CONSTRUCTION SITE, WHO CARRY OUT THEIR ACTIVITY IN A DIFFERENT WORKPLACE, AND VICE VERSA

TRAINING AT SOURCE	ACCESS TO:	PREREQUISITES
Basic-level metal course (50 hours)	Basic-level construction course (60 hours)	14-hour module on the core part of trades, defined as the base standard. (Annex VI section B of the agreement)
Basic-level metal course (50 hours)	Construction trade course (20 hours)	Module for specific trade (6 hours)
Basic-level construction course (60 hours)	Basic-level metal course (50 hours)	Automatic equivalence
Basic-level construction course (60 hours)	Metal trade course (20 hours)	Module for specific trade (8 hours)
Construction trade course (20 hours)	Metal trade course (20 hours)	Module for specific trade (8 hours)
Metal trade course (20 hours)	Construction trade course (20 hours)	Module for specific trade (6 hours)

PROFESSIONAL CARD AND APPROVAL OF TRAINING ENTITIES

METAL SECTOR PROFESSIONAL CARD	CONSTRUCTION PROFESSIONAL CARD FOR THE METAL SECTOR
Having received **at least one of the training modules** set out in Annex II	Having received at **least the minimum initial** training provided in Annex IV
Expires after 5 years	Expires after 5 years

APPROVAL OF TRAINING ENTITIES. REQUIREMENTS	APPROVAL OF TRAINING ENTITIES. REQUIREMENTS
Entities established as accredited external prevention services by the labour authority, or companies covered by the activity sectors provided in this Agreement, which have their own prevention organisation, may request from the FMF (Metal Foundation for Training, Qualification, and Employment) approval for the preventive training they deliver	Entities established as accredited external prevention services (SPA) by the labour authority, or companies falling under the activity sectors listed in Article 95.1 of this Agreement, which have their own prevention organisation, may request from the FMF (Metal Foundation for Training, Qualification, and Employment) approval for the preventive training they deliver

CRITERIA REGARDING THE OCCUPATIONAL RISK PREVENTION TRAINING OF METAL SECTOR WORKERS WHO WORK ON CONSTRUCTION SITES: EQUIVALENCES

1. RECOGNITION OF THE TRAINING OF METAL SECTOR WORKERS IN RELATION TO THE CONTENTS OF THE REGULATIONS ON PREVENTION SERVICES, AS WELL AS THE TRAINING RECEIVED BY HEALTH AND SAFETY COORDINATORS

EQUIVALENCE OF PREVENTIVE TRAINING FOR THE METAL SECTOR	
Intermediate-level training	– **Initial training** – **Management staff** – **Site managers and technical supervisors** – **Middle management** – **Prevention officers** – **Administrative staff** – **Common core of trades (14 hours)** – **Basic-level course**
Higher-level training	– **Initial training** – **Management staff** – **Site managers and technical supervisors** – **Middle management** – **Prevention officers** – **Administrative staff** – **Common core of trades (14 hours)** – **Basic-level course**
50-hour basic-level training delivered between 1 January 1998 and 31 December 2009 **60-hour basic-level training**	– **Initial training** – **Site managers and technical supervisors** – **Middle management** – **Administrative staff** **Common core of trades (14 hours)**
Health and safety coordinator	– **Initial training** – **Site managers and technical supervisors** – **Middle management** – **Prevention officers** – **Administrative staff** – **Common core of trades (14 hours)**

2. EQUIVALENCES FOR SECOND-CYCLE TRAINING SPECIFIED IN THE STATE COLLECTIVE BARGAINING AGREEMENT FOR THE METAL SECTOR

In the second-cycle trade-specific training**, there is a common or core part lasting 14 hours** and a **specific part lasting 6 hours**.

The **six-hour specific** trade training will be given **face-to-face**.

As for the **specific part**, training content is set for the following job positions or trades:

- rebar work
- plumbing and air-conditioning installations
- lift equipment operators
- manual equipment operators
- installations, repairs, assemblies, metal structures, metal joinery and locksmithing
- insulation and waterproofing works
- tubular structure assembly work
- railway construction and maintenance works
- machinery and vehicle maintenance work on construction sites
- work on telecommunications installations
- work on gas pipelines and combustible gas distribution networks

3. EXCEPTIONS FOR THE TRAINING CONTENT ON ELECTRICITY, ASSEMBLY AND MAINTENANCE OF HV AND LV, AND FOR LIFT INSTALLATION

If a worker has **received the basic-level training** for metal activities in construction, the specific Second-Cycle training for the Electricity module (assembly and maintenance of HV and LV installations) or the Lift Installation module shall be recognized, with **additional six hours of face-to-face training** per module, in accordance with the specific content defined in Section C of Annex VI.

- **Except for** electricians or operators for the assembly and maintenance of HV and LV installations and lift or hoist installers, **six-hour specific training courses may be provided** for the job positions or trades and for those workers **who have previously taken a complete 20-hour training course**.
- Since most of the content of the training for hand tool operators is already covered in the different related trades, it is not considered necessary to repeat it.

In any case, the 20-hour training courses are still in place for workers who only wish to pursue one of the trades

2.46. DRONE OPERATION

DRONE OPERATION
CONSOLIDATED EUROPEAN LEGISLATION • **Consolidated Commission Implementing Regulation (EU) 2019/947,** incorporating amendments from Implementing Regulation (EU) 2020/639, Implementing Regulation (EU) 2020/746, Implementing Regulation (EU) 2021/1166, and Implementing Regulation (EU) 2022/425 • **Consolidated Commission Delegated Regulation (EU) 2019/945**, incorporating amendments from Delegated Regulation (EU) 2020/1058 **NATIONAL LEGISLATION** Additionally, from 25 June 2024 onward, the national UAS legislation applies. This regulation supplements the legal regime applicable to the civil use of UAS subject to EU legislation, and governs activities excluded from EU regulations • **Royal Decree 517/2024 of 4 June**, implementing the legal regime for the civil use of unmanned aircraft systems (UAS), and amending various regulatory provisions concerning import control for certain products with respect to the regulations applicable to product safety; civil air demonstrations; firefighting, search and rescue, and airworthiness requirements and licences for other aeronautical activities; registration of civil aircraft; electromagnetic compatibility of electrical and electronic equipment; Air regulations and common operational provisions for navigation services and procedures; and reporting of civil aviation occurrences **DEFINITIONS / CLARIFICATIONS** • **AESA:** Spanish State Aviation Safety Agency • **EASA (European Union Aviation Safety Agency):** EU agency for Aviation Safety

- **UAS (Unmanned Aircraft Systems):** Unmanned Aircraft Systems
- **U-SPACE AIRSPACE:** a UAS geographical zone designated by Member States, in which only UAS operations supported by U-Space services may take place
- **U-SPACE SERVICE:** a service based on digital services and function automation, designed to enable protected, efficient, and safe access to U-Space airspace for a large number of UAS
- **MTOM:** Maximum take-off mass of the UA, as defined by the manufacturer or builder, including payload and fuel, at which it can be operated
- **"NON-EASA" ACTIVITIES OR SERVICES:** EU regulations do not apply to "non-EASA" activities or services, so operators performing these types of activities must comply with the provisions of Royal Decree 517/2024
  "Non-EASA activities or services" are those excluded from the scope of Regulation (EU) 2018/1139 of the European Parliament and of the Council, Article 2.3, a), carried out by military, customs, police, search and rescue, firefighting, border control, coastal surveillance or similar services, under the control and responsibility of a Member State, undertaken in the public interest by a body invested with public authority or on its behalf
- **UAS OPERATOR:** any natural or legal person who operates or intends to operate one or more UAS
- **REMOTE PILOT:** natural person responsible for safely conducting the flight of a UA by using its flight controls, whether manually or, when the UA is flying automatically, by supervising its course with the ability to intervene and change its course at any time

OPERATIONAL CATEGORIES

Implementing Regulation (EU) 2019/947 sets out the rules and procedures applicable to the use of unmanned aircraft. Based on the level of operational risk, there are three operational categories: **'open' category**, **'specific' category**, and **'certified' category**.

1. OPERATIONS WITH UAS/DRONES IN THE OPEN CATEGORY (Subcategories A1, A2, and A3)

The **'open' category** encompasses UAS operations deemed **low-risk**. Operations in the 'open' category do not require an operational authorisation from AESA or a UAS operator declaration before starting the operation.
UAS operators who reside in Spain (if natural persons) or have their principal place of business there (if legal persons) must register electronically through AESA's electronic office when:

- They operate any unmanned aircraft in the **'open' category**:
  - With an MTOM of 250 g or more, or that, in the event of collision, could transfer to a human being a kinetic energy exceeding 80 joules
  - equipped with a sensor capable of capturing personal data, unless it complies with Directive 2009/48/EC ("Toy Directive")
- They operate an unmanned aircraft of any mass in the **'specific' category**

1.1. MINIMUM DOCUMENTATION REQUIRED TO PERFORM UAS OPERATIONS IN THE 'OPEN' CATEGORY

Any operator intending to conduct operations in the 'open' category must hold the following documentation:

- **Registration certificate and/or proof of registration as a UAS operator**: The operator's registration number must be indicated on all UAS being operated, in such a way that it can be read at a glance when the drone is on the ground. The registration number may be placed inside the battery compartment if the UA's size does not allow it to be displayed externally, or if it is a scale model replica of a real aircraft and displaying the operator's registration number on the fuselage would affect the realism of the model.
- The operator's pilots must hold a remote pilot **training certificate** for A1/A3 (and A2, if applicable)
- **Civil liability insurance policy**
- In the event that the operator has more than one remote pilot, it must have procedures in place for coordinating the activities among its employees and establish and maintain a list of personnel and assigned tasks

1.2. THE 'OPEN' CATEGORY IS FURTHER DIVIDED INTO THREE SUBCATEGORIES: A1, A2 AND A3

1. **OPERATIONS IN SUBCATEGORY A1** are carried out while avoiding overflight of non-participating persons and gatherings of people.

UAS that are suitable for flying under this subcategory must have one of the following characteristics:

- Privately built with an MTOM <250 g and a maximum speed under 19 m/s
- MTOM <250 g, no **class marking**, and have been placed on the market before 1 January 2024, subject to the following requirements:
  - If the unmanned aircraft's maximum take-off mass is under 250 g, including payload, the operation falls under subcategory A1.

  - If the unmanned aircraft's maximum take-off mass is less than 25 kg, including fuel and payload, the operation falls under subcategory A3
- Carry a class C0 marking label and, therefore, meet the following technical requirements:
  - MTOM <250 g
  - maximum horizontal flight speed of 19 m/s
  - electric power supply
- Carry a class C1 marking label and, therefore, meet the following technical requirements:
  - MTOM <900 g or energy transmitted in the event of impact <80 joules
  - maximum horizontal flight speed of 19 m/s;
  - electric power supply
  - unique serial number
  - a direct and network remote identification system
  - a geo-awareness system
  - low-battery warning system for the unmanned aircraft and the control station (CS)

2. OPERATIONS IN SUBCATEGORY A2 must be carried out while maintaining a minimum horizontal safety distance of at least 30 m from people not participating in the operation.
Operations in subcategory A2 may only be conducted with UAS that carry the **class C2 marking**, i.e. those that meet the following characteristics:

- MTOM <4 kg
- unless it is a fixed-wing unmanned aircraft, be equipped with a selectable low-speed mode that limits the speed to a maximum of 3 m/s
  - electric power supply
  - unique serial number
  - a direct and network remote identification system
  - a geo-awareness system
  - low-battery warning system for the unmanned aircraft and the control station (CS);
  - be equipped with a data link protected against unauthorised access to command and control functions (C2)
- be fitted with lights for attitude control and night flying

3. OPERATIONS IN SUBCATEGORY A3 are carried out in areas that do not pose a risk to any non-participating persons and at a minimum horizontal safety distance of 150 m from residential, commercial, industrial, or recreational areas.
Operations in subcategory A3 must be carried out with UAS that meet one of the following requirements:

- They are privately built with an MTOM <25 kg
- Without a **class marking** and placed on the market before 1 January 2024, subject to the following requirements:
  - If the unmanned aircraft's maximum take-off mass is under 250 g, including payload, the operation falls under subcategory A1.
  - If the unmanned aircraft's maximum take-off mass is less than 25 kg, including fuel and payload, the operation falls under subcategory A3
- They carry a class C2 marking
- Carry a class C3 marking label and therefore meet the following technical requirements:
  - MTOM <25 kg and a maximum dimension under 3 m
  - electric power supply
  - unique serial number
  - a direct and network remote identification system
  - a geo-awareness system
  - low-battery warning system for the unmanned aircraft and the control station (CS);
  - be equipped with a data link protected against unauthorised access to command and control functions (C2)
  - be fitted with lights for attitude control and night flying
- Carry a class C4 marking label and therefore meet the following technical requirements:
  - MTOM <25 kg
  - be safely controllable and manoeuvrable by a remote pilot following the manufacturer's instructions
- not include automatic control modes, except for flight stabilization assistance without any direct effect on the trajectory and for assistance in the event of link loss, provided there is a predefined fixed position of the flight controls in case of link loss
- be intended for aeromodelling activities

From 1 January 2024 onward, in the open category, aspects related to the **DIRECT REMOTE IDENTIFICATION SYSTEM ("DRI")** are summarized in the following table:

Main requirements from 1/1/2024
Open category

UAS			Operation		Training
Class	DRI	MTOM:	Subcat	Operational restrictions	Requirements for pilots
Private construction	x	< 250 g	A1	• Flying over people is not recommended • Flying over gatherings of people is not permitted.	Familiarisation with the user manual provided by the UAS manufacturer
Legacy < 250g	x				
C0	x				
C1	✓	< 900 g		• Do not fly over non-participants. • Flying over gatherings of people is not permitted.	• Familiarisation with the user manual provided by the UAS manufacturer • Proof of successful completion of online training
C2	✓	< 4 kg	A2	• Do not fly over non-participants. • 30 metres from any person and/or participant • 5 m distance if low speed mode available	• (illegible) • Proof of successful completion of online training • (illegible) • (illegible)
C3	✓	< 25 kg	A3	• Do not fly near people • Distance of 150 m from: ◦ Residential areas ◦ Commercial areas ◦ Industrial areas ◦ Recreational areas	• Familiarisation with the user manual provided by the UAS manufacturer • Proof of successful completion of online training
C4	x				
Private construction	x				
Legacy < 250g	x				

2. OPERATIONS WITH UAS/DRONES IN THE 'SPECIFIC' CATEGORY

The **'specific' category** includes UAS operations presenting a **medium risk**, which cannot be performed in the open category.
Before conducting aerial operations in the specific category with an UAS, an operator registered in Spain must request and **obtain an operational authorisation** issued by the Spanish Aviation Safety Agency (hereinafter AESA), **or submit a declaration** for an operation that fits a standard scenario.
An operational authorisation or declaration will not be required for UAS operators who hold a light UAS operator certificate (LUC).

2.1. NATIONAL STANDARD SCENARIOS

AESA has defined two national standard scenarios, which may be adopted for unmanned aircraft operations covered by Commission Implementing Regulation (EU) 2019/947 in Spanish sovereign territory and airspace.
These national standard scenarios are analogous to the European standard scenarios, providing an equivalent level of safety without requiring operation with an aircraft that has a class marking, by means of additional technical requirements and operational limitations.
The published national standard scenarios are as follows:

- **STS-ES-01:** VLOS operations over a controlled ground area in a populated environment
- **STS-ES-02:** BVLOS operations with airspace observers over a controlled ground area in a sparsely populated environment

Implementing Regulation (EU) 2017/947 defines a "controlled ground area" as an area of land where the UAS is operated and where the UAS operator can ensure that only persons participating in the UAS operation are present.

2.2. EUROPEAN STANDARD SCENARIOS

The European standard scenarios are set out in Implementing Regulation (EU) 2017/947 (regulatory link) and are as follows:

- **Standard scenario 1 ("STS-01"):** VLOS operations over a controlled ground area in an urban environment with UAS that have a class C5 identification;
- **Standard scenario 2 ("STS-02"):** BVLOS operations over a controlled ground area in a sparsely populated environment with UAS that have a class C6 identification.

From 1 January 2024 onward, UAS operators can adopt those European standard scenarios, upon submitting an operational declaration beforehand for standard scenario STS-01 and/or STS-02.

3. OPERATIONS WITH UAS/DRONES IN THE 'CERTIFIED' CATEGORY

The new EU legislation, both in Implementing Regulation (EU) 2019/947 and Delegated Regulation (EU) 2019/945, already defines and clearly sets out the boundaries for these operations.
UAS operations conducted in the 'certified' category will require UAS certification by EASA, operator certification, and, where applicable, obtaining a licence by the remote pilot.
UAS operations will be classified in the "certified" category only when:

- The UAS has a characteristic dimension of 3 m or more, its design is certified by EASA for use over gatherings of people, and the operation involves flying over gatherings of people
- The UAS design is certified by EASA for transporting persons, and the operation involves transporting persons
- The UAS design is certified by EASA for transporting hazardous goods, as it requires a high degree of robustness to mitigate risks to third parties in the event of an accident, and the operation involves the transport of hazardous goods that may pose a high risk to third parties if an accident occurs
- AESA, based on the operational risk assessment for the "specific" category, considers that the operation's risk cannot be sufficiently mitigated without EASA certification of the UAS and the UAS operator, and where applicable, without the remote pilot obtaining a licence

MINIMUM AGES FOR UAS REMOTE PILOTS

Article 9 of Implementing Regulation (EU) 2019/947 on the minimum ages of remote pilots establishes that the minimum age in the **"open" and "specific"** categories is **sixteen years**. However, exceptions apply to this requirement depending on the type of UAS being operated, making it possible in certain situations to reduce the age in the "**open**" category
Likewise, paragraph 3 of that Article 9 of Implementing Regulation (EU) 2019/947 stipulates that Member States may reduce the minimum age of sixteen years for operations carried out in their territory.
In Spain, Article 7 of Royal Decree 517/2024 stipulates that the minimum age for using UAS in the "open" category is reduced in the following cases:

- Down to twelve years old for the use of UAS in subcategory A1 when operating:
  - a class C0 UAS that is not a toy; or
  - a "legacy" UAS with an MTOM <250 g
- Down to fourteen years old in any of the following cases:
  - When operating in subcategory A1 with a class C1 UAS;
  - When operating in subcategory A2 or A3 with a class C2 UAS;
  - When operating in subcategory A3 with a class C3 or C4 UAS; a privately built UAS with an MTOM below 25 kg; or a "legacy" UAS with an MTOM <25 kg.

Regarding **non-EASA operations** carried out directly by a body vested with public authority, Article 16 of Royal Decree 517/2024 stipulates that the **minimum age** to act as a **UAS operator or remote pilot** in **non-EASA activities or services is sixteen years**.

REMOTE PILOT TRAINING FOR UAS/DRONES

1. REMOTE PILOT TRAINING FOR UAS/DRONES IN THE 'OPEN' CATEGORY

The 'open' category covers UAS operations that entail a low risk and do not require authorisation or declaration. It is divided into three subcategories: A1, A2, and A3. The training required for the pilot depends on the characteristics of the aircraft the pilot intends to operate.
The following table summarizes the operating conditions in the "open" category:

UAS			Operation		Training
Class	DRI**	MTOM:	Subcategory	Operational restrictions	Requirements for pilots
Private construction	NO X	< 250 g	A1	• Flying over people is not recommended • Flying over gatherings of people is not permitted.	• Familiarisation with the user manual provided by the UAS manufacturer
Legacy* < 250g	NO X				
C0	NO X				
C1	YES ✓	< 900 g		• Do not fly over non-participants. • Flying over gatherings of people is not permitted.	• Familiarisation with the user manual provided by the UAS manufacturer; and • Proof of successful completion of online training
C2	YES ✓	< 4 kg	A2	• Do not fly over non-participants. • 30 metres from any person and/or participant • 5 m distance if low speed mode available	• Familiarisation with the user manual provided by the UAS manufacturer; and • Proof of successful completion of online training, and • Declaration of self-training, and • Distance Pilot Certificate of Competence

C3	YES ✓	< 25 kg	A3	• Do not fly near people
				• Distance of 150 m from:
				  • Residential areas
				  • Commercial areas
				  • Industrial areas
				  • Recreational areas
					• Familiarisation with the user manual provided by the UAS manufacturer; and
					• Proof of successful completion of online training

C4	NO X				
Private construction	NO X				
Legacy* > 250g	NO X				

**UAS as defined in Article 20 of SR (EU) 2019/947, i.e. that have been placed on the market before 01 January 2024 and are not privately built and not class marked, shall be considered as "legacy" drones.*
***("DRI": Direct Remote Identification)*

a. TRAINING IN "OPEN" SUBCATEGORY A1/A3

i. TRAINING REQUIREMENTS IN SUBCATEGORY A1

All UAS pilots intending to operate UAS with the characteristics outlined below are only required to be familiar with **the user manual provided by the UAS manufacturer**:

- They are privately built with an MTOM <250 g and a maximum speed under 19 m/s.
- Having an MTOM <250 g, no class marking, and placed on the market before 1 January 2024, subject to the requirements set out in the section "UAS/drones without class marking ("legacy") that are not privately built"
- Having a class C0 marking label

It is recommended, although not mandatory, that the UAS pilot holds the theoretical knowledge certificate in subcategory A1/A3, which involves a free theoretical exam conducted by AESA, to ensure the pilot has the basic aeronautical training necessary to carry out UAS operations safely.

All UAS pilots intending to operate UAS in **subcategory A1** with the characteristics set out below **must obtain the subcategory A1/A3 theoretical knowledge certificate for remote pilots**:

- All UAS that have a **class C1 marking**

Training in subcategory A1 allows the UAS pilot to carry out operations while avoiding flight over non-participating persons and prohibiting flight over gatherings of people.

ii. TRAINING REQUIREMENTS IN SUBCATEGORY A3

All UAS pilots intending to operate UAS in **subcategory A3** with the characteristics set out below **must obtain the subcategory A1/A3 theoretical knowledge certificate for remote pilots**;

- Be privately built with an MTOM of up to 25 kg.
- Have an MTOM <250 g, **no class marking**, and placed on the market before 1 January 2024, subject to the requirements set out in the section "UAS/drones without class marking ("legacy") that are not privately built"
- Carry a class **C2, C3, or C4** marking label

Training in *subcategory A3* allows the UAS pilot to conduct operations at a distance of at least 150 metres from residential, commercial, industrial, or recreational areas and does not permit flight over persons or gatherings of persons.

The theoretical **certificate for a remote pilot in Subcategory A1/A3** can only be obtained by completing an online training course, **followed by an online exam given by AESA**. The registration, training, and examination procedure is entirely free of charge.
The exam syllabus consists of 9 different subjects, leading to 40 questions with a duration of 40 minutes.
To obtain the "Proof of passing online training" certificate, the exam must be passed with at **least 75%** correct answers, and upon completion of an attempt, the result will show as Passed. Once the exam is passed, **no further action is** required.
When the certificate is issued, the user will receive a notice at the email address they provided when registering. The **certificate is valid for 5 years** and the renewal process must be initiated with AESA before its expiry date.

b. TRAINING IN "OPEN" SUBCATEGORY A2

Training in the "open" subcategory A2 is intended for UAS pilots who wish to conduct their operations **solely with a Class C2-marked UAS, and not operate with a UAS of different characteristics.**
To obtain the remote pilot certificate in subcategory A2, the pilot must first pass the theoretical exam for remote pilots in subcategory A1/A3, and at the time of exam registration with AESA, **declare that self-training of practical skills has been completed.**

As with the "open" subcategory A1/A3 procedure, the remote pilot will have 2 attempts to pass it, and must achieve at least 75% correct answers. Once the exam is passed, no further action is required. When the certificate is issued, the user will receive a notice at the email address they provided when registering. The **certificate is valid for 5 years** and the renewal process must be initiated with AESA before its expiry date.

2. REMOTE PILOT TRAINING FOR UAS/DRONES IN THE 'SPECIFIC' CATEGORY UNDER NATIONAL STANDARD SCENARIOS (STS-ES)

The 'specific' category includes UAS operations with a medium level of risk, which cannot be covered in the "open" category.
Commission Implementing Regulation (EU) 2019/947 on the rules and procedures for the operation of unmanned aircraft provides, in Article 23(4), that Member States may develop **national standard scenarios equivalent** to those set out in the Regulation, which remain valid during the transitional period that ends on **31 December 2025**. Operators can submit the corresponding STS-ES operational declarations **until 30 August 2024**
In Spain, under Royal Decree 517/2024, **two national standard scenarios (STS-ES-01 and STS-ES-02) have been developed, equivalent to the "standard" scenarios set out in the Regulation**.
The national standard scenarios (STS-ES) are **only valid for conducting operations within Spanish sovereign territory and airspace** using unmanned aircraft subject to Commission Implementing Regulation (EU) 2019/947, and therefore **have no validity** either in other EASA Member States or in third countries.
Article 20 of Royal Decree 517/2024 states that, for carrying out UAS operations in national standard scenarios ("STS-ES"), remote pilots must:

a) a) Hold a theoretical knowledge certificate for remote pilots, in accordance with the annex to this Royal Decree, for conducting operations in standard scenarios, issued by the Spanish Aviation Safety and Security Agency (AESA); and
b) b) Hold an accreditation of complete practical skills training for the corresponding standard scenario in each case, in accordance with the annex to this Royal Decree, issued by an entity authorised under Article 21.

ANNEX

Theoretical knowledge of the remote pilot and practical skills test for national standard scenarios ("STS-ES")

1) Theoretical knowledge exam

a) The exam referred to in Article 20(1) shall consist of at least forty multiple-choice questions designed to assess the remote pilot's knowledge of technical and operational mitigations, appropriately distributed among the following subjects:
   i. aviation regulations
   ii. human performance limitations
   iii. operational procedures
   iv. technical and operational mitigations of ground risk
   v. general knowledge of unmanned aircraft (UA)
   vi. meteorology
   vii. UAS flight performance, and
   viii. technical and operational mitigations of risks in the air

b) In order to pass the theoretical knowledge exam, the remote pilot in training must achieve at least 75% of the total score
c) Additionally, through AMC (Acceptable Means of Compliance) adopted by the competent body of the Spanish Aviation Safety Agency, other ways of demonstrating theoretical knowledge may be recognised

2) *Practical skills training and assessment*

The training and assessment of practical skills for conducting operations in any national standard scenario shall include, at a minimum:

a) Theoretical-practical training and assessment specific to each national standard scenario, in which the remote pilot's knowledge is evaluated on the following topics:
   i. operational limitations and requirements of the standard scenario
   ii. requirements and characteristics of the unmanned aircraft used in the standard scenario
   iii. operational procedures specific to the standard scenario; and
   iv. required coordination specific to the standard scenario (if applicable)
b) Specific practical training and assessment for each national standard scenario in the subjects and areas listed in **table 1**
c) Additionally, in those national standard scenarios whose concept of operations includes operations beyond the pilot's visual line of sight (BVLOS), the in-flight procedures defined in Table 1, point b), item (ii), shall be conducted in BVLOS mode
d) Additionally, through AMC (Acceptable Means of Compliance) adopted by the competent body of the Spanish Aviation Safety Agency, other means of demonstrating practical training and skills assessment may be recognised

All of the above takes into account the **content concerning Subjects and areas to be included in training and assessment of practical skills, as indicated in Table 1 of the ANNEX** to Royal Decree 517/2024

3. UAS/DRONE PILOT TRAINING IN EUROPEAN STANDARD SCENARIOS (STS)

The European standard scenarios (STS) are valid for **conducting operations within the territory and airspace of the European Union** using unmanned aircraft subject to Commission Implementing Regulation (EU) 2019/947, and therefore have no validity in third countries.

a. THEORETICAL TRAINING FOR REMOTE PILOTS IN STS

The **theoretical training** for standard scenarios (STS) may be provided by a recognised training entity, a UAS operator, or conducted independently, provided the STS theoretical syllabus indicated in Implementing Regulation (EU) 2019/947 is followed. AESA is responsible for conducting the theoretical knowledge exam for the standard scenarios and issuing, where applicable, the theoretical knowledge certificate.

The format of the theoretical knowledge exam in the "specific" category under a standard scenario (STS) depends on the pilot's prior theoretical training in the "open" category, with two possible options:

- If **proof of passing A1/A3 in the 'open' category is held**: A theoretical exam of 40 questions will be taken, lasting 40 minutes, based on 8 subjects
- If **an 'open' category A2 certificate is held**: A theoretical exam of 30 questions will be taken, lasting 30 minutes, based on 5 subjects described in the Syllabus

b. PRACTICAL TRAINING FOR REMOTE PILOTS IN STS

After passing the theoretical exam with AESA for operating under a standard scenario, it is necessary to **obtain specific practical training** for each scenario (STS-01 and STS-02). This must be provided by recognised entities or by UAS Operators declared to AESA to offer practical training in **European standard scenarios (STS)**.

This training must consist of **continuous assessment** of the UAS remote pilot's practical skills, as well as subsequently issuing the accreditation of UAS remote pilot practical skills in the standard scenario (STS) in which training was completed.

UAS pilots who wish to receive remote pilot practical training for the standard scenarios (STS) must consider the following requirements for each type of scenario:

- Practical training in standard **scenario STS-01**: VLOS operations over a controlled ground area in a populated environment with UAS that have a class **C5** marking
- Practical training in standard **scenario STS-02**: BVLOS operations over a controlled ground area in a sparsely populated environment with UAS that have a class **C6** marking

c. CONVERSION OF STS-ES CERTIFICATES TO STS CERTIFICATES

Pilots holding the theoretical certificate and/or accreditation of practical skills for UAS remote pilot national standard scenarios (STS-ES) may convert their certificates to the European standard scenarios (STS) under the new UAS remote pilot training scheme, in accordance with Implementing Regulation (EU) 2019/947.
All those remote pilots who meet the following criteria may apply for conversion:

- They have passed the theoretical exam in the standard scenarios and/or
- The practical training and assessment for remote pilots in the national standard scenarios (STS-ES), and who have the following in their possession:
  - The STS remote pilot theoretical knowledge certificate
  - Practical training and assessment accreditations for remote pilots in the national standard scenarios (STS-ES)

2.47. GAS HANDLING SAFETY PRECAUTIONS AND RULES

GAS HANDLING SAFETY PRECAUTIONS AND RULES (DURATION 4 HOURS) THEORY REFRESHER: 5 YEARS
Contents: 1. Concept of gases; density; flammability; lower/upper flammability or explosivity limit 2. Classification of gases 3. Gases that are harmful to health: CO, H2S, O2, acetylene, argon 4. Toxicology and toxicokinetics of gases: the effect of gases on the human body 5. Hazard identification, pictograms 6. First aid measures, firefighting measures, spill or leak control measures, handling, and storage 7. Personal protective measures 8. Operations involving flammable gases 9. Techniques and equipment for gas monitoring

2.48. SAFE USE OF DIISOCYANATES LEVEL 1

SAFE USE OF DIISOCYANATES LEVEL 1 (DURATION 5 HOURS) THEORY REFRESHER: 5 YEARS
INTENDED FORM: professional staff with a low risk of dermal and inhalation exposure to diisocyanates
1. chemical aspects of diisocyanates 2. toxicity hazards (including acute toxicity) 3. exposure to diisocyanates 4. occupational exposure limit values 5. how awareness develops 6. odour as a hazard indicator 7. importance of volatility in risk 8. viscosity, temperature, and molecular weight of diisocyanates 9. personal hygiene 10. Required PPE, including practical instructions for proper use and its limitations 11. risks of exposure via skin contact and inhalation 12. risks associated with the application processes used 13. skin and inhalation protection plan. 14. ventilation 15. cleaning, leaks, maintenance 16. disposal of empty containers 17. protection of bystanders 18. identification of critical handling stages 19. specific systems from national regulations (if applicable) 20. behaviour-based safety 21. certificate or documentary evidence of successful completion of training

2.49. 4X4 OFF-ROAD VEHICLE DRIVING

SAFE OFF-ROAD VEHICLE DRIVING TRAINING (DURATION 8 HOURS) THEORY - PRACTICAL REFRESHER: 5 YEARS
INTENDED FOR: staff who use these vehicles in daily operations, driving in off-road or non-paved environments
1. Driving a 4x4 vehicle 2. Emergency manoeuvres 3. Ascending ramps and descending slopes 4. Navigating trenches, ruts, and rocks 5. Rescue accessories and their use 6. Gear lever selection: 2H, 4H and 4L 7. Mud and wading depth 8. Maximum lateral inclines, control measures