

# Module *BTTI* Installation

## *BTT Installation*

BTTI (18 h)



**Aim:** The aim of this BTT Installation Module is to give the participants the knowledge and skills to carry out basic installation tasks (supervised by an experienced technician), using safe working procedures and the correct PPE.

### PROGRAM: BTTI Basic Technical Training Installation

1. Introduction to the BTT Installation Module
  - 1.1 Safety instructions and emergency procedures
  - 1.2 Facilities
  - 1.3 Introduction
  - 1.4 Aim and objectives
  - 1.5 On-going assessment
  - 1.6 Motivation
  - 1.7 Human factor
2. Introduction to Installation
  - 2.1 Installation overview
  - 2.2 Why installation safety?
  - 2.3 Safety signs
  - 2.4 Types of PPE
  - 2.5 The importance of appropriate isolation
3. General procedures for working onsite with installation
  - 3.1 Checklists, Work instructions, etc.
  - 3.2 Housekeeping
4. Installation environments
  - 4.1 Installation environments
5. Handling and storing
  - 5.1 Risks and hazards associated with handling and storing
  - 5.2 Reception / Inspection
  - 5.3 Unloading and storage of blades, nacelle, tower sections & hub
  - 5.4 Tools and equipment
  - 5.5 Return of goods and components
6. Lifting operations
  - 6.1 Types of lifting
  - 6.2 Risks and hazards associated with lifting operations
  - 6.3 Roles and responsibilities
7. Main component preparation, pre-assembly and assembly
  - 7.1 Preparation, pre-assembly and assembly
  - 7.2 Risks and hazards associated with main component preparation, pre-assembly and assembly
  - 7.3 Challenges when assembling the main components
8. Principles of mechanical Completion
  - 8.1 Introduction to mechanical completion
  - 8.2 Examples of mechanical completion
  - 8.3 Risks and hazards associated with mechanical completion
9. Principles of electrical completion including cable work
  - 9.1 Introduction to electrical completion
  - 9.2 Examples of electrical completion
  - 9.3 Risks and hazards associated with handling and working with cables
  - 9.4 Different types of cables
  - 9.5 Simple installation diagrams
  - 9.6 Cutting and crimping of cables
  - 9.7 Marking, routing and termination of all cable types
10. Principles of hydraulic completion
  - 10.1 Introduction to hydraulic completion
  - 10.2 Examples of hydraulic completion
  - 10.3 Risks and hazards associated with hydraulic completion
11. Principles of operation with external generators
  - 11.1 Principles of yaw, rotor and blade operation with external generator
  - 11.2 Risks and hazards associated with the operation of auxiliary systems with an external generator
  - 11.3 Preconditions for the operation of a lift with an external generator
  - 11.4 Preconditions for the operation of an internal crane with an external generator
  - 11.5 Use of external generators for other auxiliary uses

12. Introduction to handover to the commissioning
  - 12.1 Handover to commissioning
  - 12.2 Risks and hazards associated with handing over to the commissioning
13. Summary and Theoretical test
  - 13.1 Summary and Theoretical test
14. Training review
  - 14.1 Training review

#### **BTTI Module** (BTT Installation)

**Duration:** 18 hours (2,5 days)

**BTTI Program :** Sections 1 to 14

**Maximum students:** 12 people per Edition.

**Prerequisites:** BTTM

#### **Certificate validity:**

Re-certification if you have not performed installation work in the last year, or at the request of the company.

#### **Headquarter:**

**Cárcar (Navarra) • Spain**

Phone: +34 948 674 881 • navarra@totalhse.com

#### **Accredited Centers:**

**Las Palmas (Canary Islands) • Spain**

SEPROM

Phone: +34 902 008 482 • canarias@totalhse.com

**Redondela (Galicia) • Spain**

Verticalia Formación

Phone: +34 986 401 472 • galicia@totalhse.com

#### **Other accredited centers:**

**Querétaro • Mexico**

Total HSE MX EUROPARK II

Phone: +52 1 55 3519 2281 • mexico@totalhse.com

**Hatzor Haglilit • Israel**

IWTC

Phone: +972 4 632 2095 • israel@totalhse.com

**San José • Costa Rica**

Desarrollos Floruma

Phone: +506 2282-7468 • sanjose@totalhse.com

**Santiago de Chile • Chile**

ENACTRAR

Phone: +56 944 402 179 • chile@totalhse.com

[www.totalhse.com](http://www.totalhse.com)

