

Doc. no: 0030-0001 V00	Doc. Type: <b>Course Outline</b>	Page: 1 of 5
Created: 2012-11-29	Description: <b>Inspection of Blades Level 1</b>	Language: GB
Reviewed: 2012-03-20	Blade type: All types in service	Issued by: OS

## Attendant profile

Attendant profile: WTG Service technicians, Site Managers, Wind farm owners / technicians

## Course duration

3 days, 21 lessons

## Pre-requisites for participation

None

## Course outcome

To qualify participant to perform blade service inspection on all types of WTG blades, according to Global Blade Service Standard.

## Objectives

After the training the participant will be able to:

- Carry out General Visual Inspection, from ground level.
- Carry out Close Visual inspection, use of hands, tape measures, photo cards, off rope or crane.
- Carry out Detailed Visual Inspection. Use of tools to further inspection of damage by sanding away damaged paint/gelcoat, and visually inspect laminate, and bonded joints.
- Inspection and measuring out LPS and making documentation.
- Recognize different types of defects and damages.
- Assess and categorize defects and damages.
- Carry out minor cosmetic repair of surface coatings.
- Use correct terms for blade communication.
- Fill in blade status report.
- Describe the general construction of WTG blades.
- Describe health risk involved when handling polyester, epoxy and isocyanates.

## Training method

Theoretical training  
Practical exercises

## Success criteria

Minimum 80% correct answers on theoretical test  
Approval of practical test

## Training modules

### 1 Training information

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- Practical information on the training course
- Presentation of participants
- Reason for training
- Objectives for training course
- Success criteria

### 2 Blade construction

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- Materials for blades
- Stress on blades
- Various blade structures
- Test of materials and blades
- Terms and definitions

### 3 Build process of blades

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- Wet lay up of laminate by hand
- Vacuum consolidation
- Infusion
- Prepreg

#### **4 Quality of laminate**

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- Quality terms
- Defects from production

#### **5 Health and safety handling materials for blades**

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- Health risk from polyester
- Health risk from epoxy
- Health risk from polyurethane
- Health risk from dust
- Personnel protective equipment
- Handling and storing chemicals on site
- Handling of waste

#### **6 Blade damages**

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- Statistic of blade damages
- Root causes for damages

#### **7 Service work instruction**

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- Reason for global standard
- Global blade service standard
- Three steps:
  - Standard documentation
  - Blade service training
  - Global blade service certification

#### **8 Inspection from ground**

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- Photo equipment
- Photo inspection
- Assessing photos

## 9 Inspection from height

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- Access to blade external and internal
- Surface inspection visual
- Measure function of lightning protecting system
- Investigating external damages
- Internal inspection visual
- Investigating internal damages

## 10 Categorization of damages

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- Damage versus risk for blade failure
- Defining category of damage
- Time frame for development of damage

## 11 Blade status report

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- Purpose for blade status report
- Filling in report template

## 12 Cosmetic repair

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- Gelcoat repair
- Fillers
- Paint repair
- Temporary repair

## 13 Practical exercises

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- General Visual Inspection
- Close Visual inspection
- Detailed Visual Inspection of damage
- Gelcoat repair
- Paint repair
- Temporary repair

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## 14 Tests

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- Theoretical test representing objectives for training course
- Practical test representing skill level for training course