

# Siemens Gamesa - SG Training Web

SE-P-17600

## Aerodynamic Power Upgrade

### Purpose

This training will enable the participant, on the background of knowledge of the composite blade structure, aerodynamic and optimization conditions, in collaboration with colleague, to organize and perform installation of Dino tails, Dino Shells and vortex generators. The participant is able to perform the job either on blades on the ground or via PRAT technique on blades that are installed on a wind turbine. The participant is aware of and can under appropriate climatic conditions implement, test and document the entire optimization task.

### Who should attend?

The training is intended for SGRE employees and 3rd parties whose duties include installation of the Aerodynamic Power Upgrade components on Siemens Gamesa blades.

### Objectives

Upon successful completion, participants will obtain necessary knowledge and skills within:

- Blade structure and design principles and specific to the current blade types.
- The result of the blade optimization.
- Relevant Siemens Gamesa Work Instructions, checklists, etc.
- Relevant safety data sheets
- Material knowledge (in the work instructions used materials)
- Material knowledge (DinoTails®, DinoShells® and Vortex Generator).
- Work-related process and climate conditions influence
- Surface types and adherence conditions
- Typical errors (e.g. wrong position and gluing)
- Using proper safety precautions when using the materials (in the work instructions used materials)
- Measuring up the actual
- Using proper gluing technique and process conditions cure times, etc.
- Control of the work performed
- Completing documentation of the work performed
- Registration of the new blade specifications internally in Siemens Gamesa.

### Prerequisites

Legal requirement in DK:

Prior the SE-P-17600 Aerodynamic Power Upgrade course the participant must have completed and passed the course: personal safety when working with epoxy and isocyanates, and is able to work safely with substances and materials containing epoxy and isocyanates in accordance with Executive Order No. 1793 of December 18 2015, issued by the Danish Working Authority

### Contents

This course is for employees who must be able to install aerodynamic components on Siemens Gamesa blades (blades on the ground and on blades installed on a wind turbine). The components, which improve the power curve, are Vortex Generators, DinoShells® and DinoTails®.

### Theory / Practice

50% / 50%

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### Notes

Upon completion the participants will be qualified to install DinoTails ®, DinoShells ® and Vortex Generators on Siemens Gamesa blades.

### Validity

24 months

### Only DK ICB Material No.

A9BS0000159

### Export control

AL-Number: N

ECCN: EAR99