

WinDS3000™ 시스템의 블레이드 개발 및 시험

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Blade Development and Test of WinDS3000™ System

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Abstract : A new blade has been developed to apply to Doosan 3MW offshore wind turbine named as WinDS3000™. The 3MW blade has been designed by the concept of slim external shape and optimized structure. High-performance glass fiber reinforced epoxy composites were used as the main material of the blade. The blade was manufactured using vacuum infusion process in order to increase the fiber volume fraction and to reduce micro-porosities. The blade has successfully passed the full-scale blade static test for certification. During the test, micro-failure signal and strain change of the blade were measured using acoustic emission sensors and strain gages. The blade has robust structure and weighs lighter compared to conventional blade since the new blade was designed by optimization process. The 3MW blade will be commercially applied to WinDS3000™ in 2010.

Key words : offshore wind turbine(해상풍력), full-scale blade static test(실물 블레이드 정하중시험), optimization process(최적화 과정), acoustic emission(음향방출시험)

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