

CBC DECISION/CLARIFICATION SHEET

Subject: Standard format for type certification		Standard and clause: IEC 61400-22:2010	Sheet No. CBC 15C
Status of document: Approved		Proposal date: 2013-10-28	Originator of proposal: OEM/Ormel
Related document:			
Revision:	Approval Date:	Description:	
A	-	Original proposal	
B	-	CBC revised proposal	
C	2014-03-17	CBC revised proposal based on EU and OEM input	

In order to provide sufficient information and transparency, the example of Type Certificate in IEC 61400-22 Annex B is extended according to the following (examples used to show principles for the certificate format). The components/systems/manuals shall be clearly identified through a unique designation e.g. drawing number including revision or part number or manual/specification version.

IEC 61400-22, Ed. 1 (Annex B, Type Certificate, second page)

Wind turbine type specification:

Machine parameters:

Model:	
WT manufacturer and country	
Power Regulation:	[-]
Rotor Orientation:	[-]
Rotor Tilt:	[°]
Cone Angle:	[°]
IEC WT class	
Rated power	[kW]
Rated wind speed V_r	[m/s]
Rotor diameter	[m]
Hub height(s)	[m]
Hub height operating wind speed range $V_{in} - V_{out}$	[m/s]
Design life time	[y]
Software Version:	[-]

Wind conditions:

Characteristic turbulence intensity I_{15} at $V_{hub} = 15$ m/s	[-]
Annual average wind speed at hub height V_{ave}	[m/s]
Reference wind speed V_{ref}	[m/s]
Mean flow inclination	[deg]
Hub height 50-year extreme wind speed V_{e50}	[m/s]

Electrical network conditions:

Normal supply voltage and range	[V]
Normal supply frequency and range	[Hz]
Voltage imbalance	[V]
Maximum duration of electrical power network outages	[days]
Number of electrical network outages	[1/y]

Other environmental conditions (where taken into account):

Design conditions in case of offshore WT (water depth, wave conditions, etc.)

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Normal and extreme temperature ranges	[°C]
Relative humidity of the air	[%]
Air density	[kg/m ³]
Solar radiation	[W/m ²]
Description of lightning protection system	
Earthquake model and parameters	
Salinity	[g/m ³]
Major components:	
Blade:	Type: (name, model, design, etc.) Material: [-] Blade length: [m] Number of blades: [-] Manufacturer: [-] Drawing / Data sheet / Part No.: OEM 1-XTW2013.22
Blade bearing:	Type: (name, model, design, etc.) Manufacturer: [-] Drawing / Data sheet / Part No.: OEM 1, No.XX
Pitch System:	Motor / actuator Type: OEM 2, No.XX Controller Type: OEM 3, No.XX
Main shaft:	Type: (name, model, design, etc.) Material: Forged steel Drawing / Data sheet / Part No.: XTW2013.22
Main bearing:	Type: Cylindrical Roller Manufacturer: [-] Drawing / Data sheet / Part No.: XX-1-753
Gearbox:	Type: 3 stage Planetary Gear Ratio: 1:155 Manufacturer: OEM 1 Drawing / Data sheet / Part No.: [-]
Yaw System:	Drive Type: 6 active yaw drives w/ variable speed drives Manufacturer: [-] Drawing / Data sheet / Part No.: [-] Bearing Type: (name, model, design, etc.) Manufacturer: [-] Drawing / Data sheet / Part No.: [-] Gear Type: (name, model, design, etc.) Manufacturer: [-] Drawing / Data sheet / Part No.: [-] Brake Type: (name, model, design, etc.) Manufacturer: [-] Drawing / Data sheet / Part No.: [-]
Generator:	Manufacturer: [-] Drawing / Data sheet / Part No.: [-] Type: Double Fed Rated Power: 3200kVA

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	Rated Frequency:	[Hz]
	Rated Speed:	[rpm]
	Rated Voltage:	600V
	Rated Current:	5,400A
	Insulation Class:	F/H
	Degree of Protection:	IP54
Converter:	Manufacturer:	[-]
	Drawing / Data sheet / Part No:	OEM1-XTW2013.22
	Type:	Full Quadrant IGBT
	Rated Voltage:	600V
	Rated Current:	2,400A
	Degree of Protection:	IPXX
Transformer:	Manufacturer:	[-]
	Drawing / Data sheet / Part No:	OEM1-XTW2013.22
	Type:	Oil Filled
	Rated Voltage:	600V/20,000V
	Degree of Protection:	IPXX, NEMAXX
	o	
Tower:	Type:	Conical steel
	Sections:	3
	Length:	78.4m
	Drawing / Data sheet / Part No:	XTW2013.22
Foundation:	Type:	Concrete slab
	Drawing / Data sheet / Part No:	ABG XXX
Foundation Adaptor:	Type:	Tubular Steel
	Drawing / Data sheet / Part No.:	XTW2013.22
Manuals:	O&M Manual:	OEM No. O237-1 Rev 2
	Transport Manual:	OEM No. T-237-3 Rev 5
	Installation/Commis. Manual:	OEM No. I-237-1 Rev 5