



MECH-V

Wind Turbine Blade Inspection Report

Example Wind Farm

T07

Report Number: MECHV-REP-XXX-XXX

Report Date: 30/05/2022

Client: Example Client Name

Location: Example Address

Asset: T07 - 25040 - Vestas V66

Wind Turbine Blade Inspection Report

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General Information

Client

Client Name	Example Client Name
Contact Person	Example Client Contact Person

Inspection Details

Wind Farm Name	Example Wind Farm
Objective	Drone inspection of wind turbine rotor blades for condition assessment and damage classification based on visual observations.
Report Number	MECHV-REP-XXX-XXX
Report Date	30/05/2022
Inspection Date	24/05/2022
Start Time	08:30
End Time	18:30
Weather	15 °C - Slightly cloudy with strong wind
Inspector(s)	Robert Foley, Stephen O'Keeffe
Report Author	Robert Foley
Report Checked	Stephen O'Keeffe
Support	2x Vestas Technicians

Asset Details

WTG Park Number	T07
Model	Vestas V66
Asset Serial #	25040
Commission Year	2007
Rated Power KW	1.75MW
Production MWh	-
Run Hrs	-
Tower Type	Steel Tubular
Hub Height (meters)	58m
Location (address)	Example Address
Location (coordinates)	123.56, -123.456

Blade Details

Blade Set #	-
Blade 1/A Serial #:	
Blade 2/B Serial #:	
Blade 3/C Serial #:	
Manufacturer	Vestas
Type	LM
Length (meters)	32
Leading Edge Protection	Painted
Aerodynamic Installations	-

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Damage Classification

SEVERITY	DESCRIPTION	ACTION	TURBINE STATUS
1	Cosmetic	No intervention required	Continue Operation
2	Minor	Repair only if there are other damages to be repaired. Monitor at next inspection.	Continue Operation
3	Medium	Repair within 6 months	Continue Operation
4	Serious	Repair within 3 months	Continue Operation
5	Very Serious	Immediate intervention required to prevent further damage to blade, wind turbine, or surrounding area.	Stop Operation

Report Summary

CAT 1 Items: 2
 CAT 2 Items: 26
 CAT 3 Items: 7
 CAT 4 Items: 0
 CAT 5 Items: 0

DN-04 / DN-24 / DN-30 / DN-33 : Some fasteners on the spinner are loose and are fretting.

DN-07 / DN-08 / DN-10 / DN-34 / DN-37 / DN-38 : Apparent "drill and fill" repairs along the blade spar line. Noted for information.

DN-09 : Spider cracks in the gelcoat can be seen in a small area near the blade tip. These have been observed on other blades in the same area. Cause is unknown.

In general the blades were noted to be in reasonable condition given their age and time in operation. Majority of damages observed are due to erosion however most do not penetrate into the laminate. There is also evidence of lightning strikes on the tip receptors.



Blade 1/A - Summary

		Serial #			
Damage Ref.	Damage Cat.	Damage Type	Dist. from root (m)	Blade Surface	Damage Description
DN-01	CAT 2	Out of alignment	0	Leading Edge	Rain deflector not flush with spinner
DN-02	CAT 2	Chipping	18	Leading Edge	Chipping on leading edge. Topcoat chipped and laminate is exposed.
DN-03	CAT 2	General observation	19	Leading Edge	Previous repair - satisfactory
DN-04	CAT 3	Loose Fastener	0	Suction Side	Loose fasteners on hub damaging underlying laminate
DN-05	CAT 2	Contamination	0	Suction Side	Grease stains on blade.
DN-06	CAT 1	General observation	20	Suction Side	Previous repair - Satisfactory
DN-07	CAT 2	Contamination	27	Suction Side	Previous repairs along blade spar. Oil leaking through from the inside.
DN-08	CAT 2	Contamination	29	Suction Side	Previous repairs along blade spar. Oil leaking through from the inside.
DN-09	CAT 3	Cracking	32	Suction Side	Cracks in top coat. These same cracks appear on some other blades in the same location. Also
DN-10	CAT 2	Contamination	31	Suction Side	Previous repairs along blade spar. Oil leaking through from the inside.
DN-11	CAT 2	Loose	0	Pressure Side	Clip has come loose
DN-12	CAT 2	Lightning damage	32	Pressure Side	Lightning receptor struck by lightning. Causing topcoat to chip and exposing laminate
DN-16	CAT 2	Erosion	15	Leading Edge	Topcoat eroded away. Exposing gelcoat.
DN-17	CAT 2	Erosion	18	Leading Edge	Topcoat eroded away. Exposing gelcoat.



Blade 2/B - Summary

		Serial #			
Damage Ref.	Damage Cat.	Damage Type	Dist. from root (m)	Blade Surface	Damage Description
DN-13	CAT 2	Out of alignment	0	Leading Edge	Rain deflector not flush with spinner
DN-14	CAT 2	Erosion	7	Leading Edge	Topcoat eroded away. Exposing gelcoat.
DN-15	CAT 2	Erosion	10	Leading Edge	Topcoat eroded away. Exposing gelcoat.
DN-18	CAT 2	Erosion	20	Leading Edge	Topcoat eroded away. Exposing gelcoat and bits of laminate.
DN-19	CAT 2	Erosion	21	Leading Edge	Topcoat eroded away. Exposing gelcoat and bits of laminate.
DN-20	CAT 2	Erosion	22	Leading Edge	Topcoat eroded away. Exposing gelcoat.
DN-21	CAT 2	Erosion	23	Leading Edge	Topcoat eroded away. Exposing gelcoat and bits of laminate.
DN-22	CAT 1	General observation	31	Suction Side	Previous repair - Satisfactory
DN-23	CAT 2	Cracking	32	Suction Side	Previous repair - Cracking in area that was repaired
DN-24	CAT 3	Loose Fastener	0	Pressure Side	Loose fasteners on hub damaging underlying laminate
DN-25	CAT 2	Loose	0	Pressure Side	Metal tie has come loose under the rain deflector
DN-26	CAT 2	Erosion	26	Pressure Side	Topcoat eroded
DN-27	CAT 2	Chipping	32	Pressure Side	Chipping to topcoat. Exposing gelcoat.
DN-28	CAT 2	Lightning damage	32	Pressure Side	Lightning receptor hit by lightning and slightly melted.



Blade 3/C - Summary

		Serial #			
Damage Ref.	Damage Cat.	Damage Type	Dist. from root (m)	Blade Surface	Damage Description
DN-29	CAT 2	Out of alignment	0	Leading Edge	Rain deflector not flush with spinner
DN-30	CAT 3	Loose Fastener	0	Leading Edge	Loose fasteners on hub damaging underlying laminate
DN-31	CAT 2	Erosion	19	Leading Edge	Chipping to blade exposing laminate.
DN-32	CAT 2	Erosion	20	Leading Edge	Topcoat and gelcoat eroded
DN-33	CAT 3	Loose Fastener	0	Suction Side	Loose fasteners on hub damaging underlying laminate
DN-34	CAT 3	Contamination	31	Suction Side	Previous repairs along blade spar. Oil leaking through from the inside.
DN-35	CAT 3	Loose Fastener	0	Pressure Side	Loose fasteners on hub damaging underlying laminate



Wind Turbine Blade Inspection Report

Damage Reference	DN-01	
Damage Category	CAT 2	
Damage Type	Out of alignment	
Distance From Root (m)	0	
Blade Surface	Leading Edge	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Rain deflector not flush with spinner	



Wind Turbine Blade Inspection Report

Damage Reference	DN-02	<p>The diagram shows two views of a wind turbine blade. The top view is labeled 'Pressure Side' and the bottom view is labeled 'Suction Side'. Both views show the 'Trailing Edge' and 'Leading Edge'. A red circle on the suction side view highlights a specific location on the leading edge.</p>
Damage Category	CAT 2	
Damage Type	Chipping	
Distance From Root (m)	18	
Blade Surface	Leading Edge	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Chipping on leading edge. Topcoat chipped and laminate is exposed.	



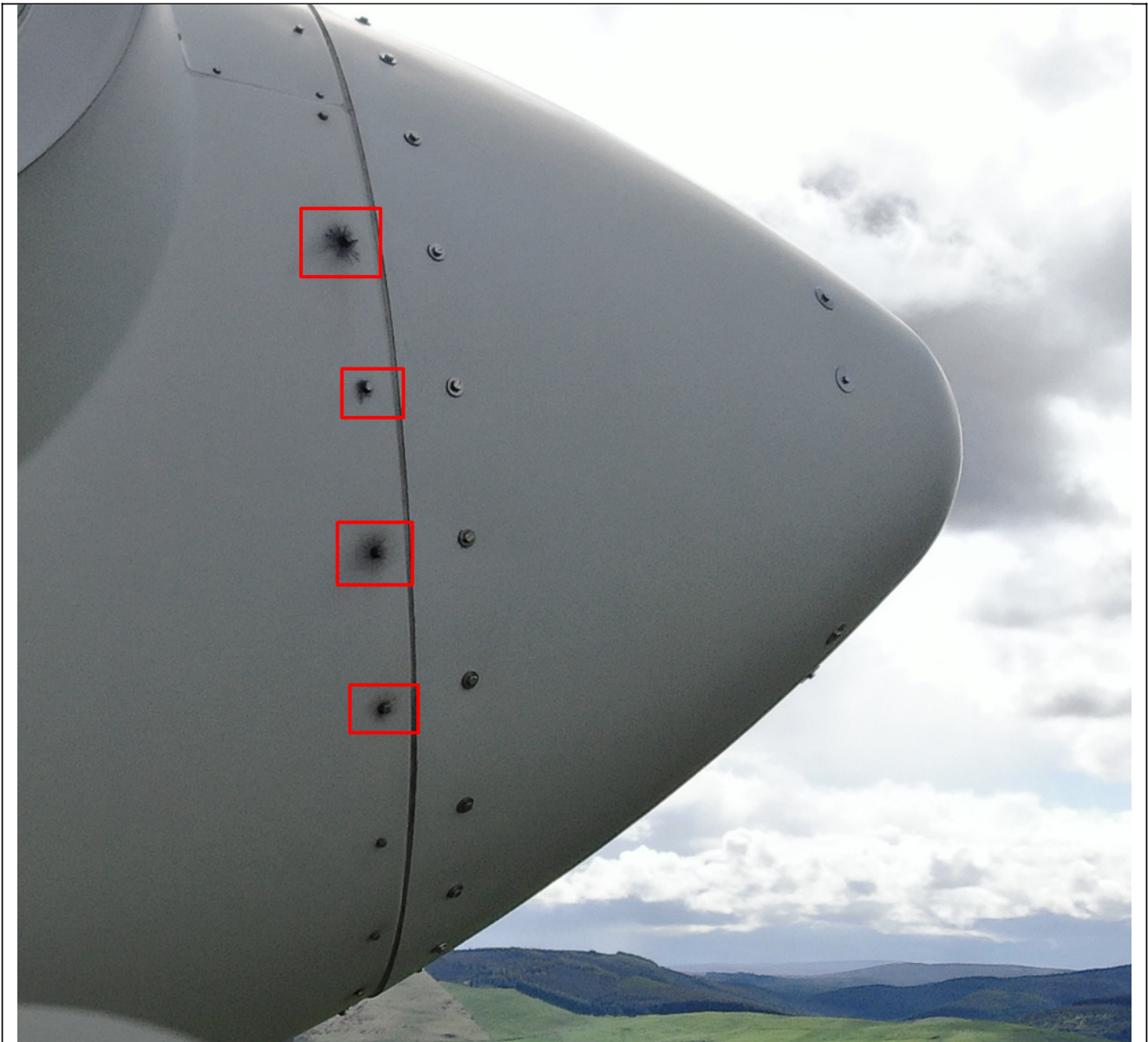
Wind Turbine Blade Inspection Report

Damage Reference	DN-03	
Damage Category	CAT 2	
Damage Type	General observation	
Distance From Root (m)	19	
Blade Surface	Leading Edge	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Previous repair - satisfactory	



Wind Turbine Blade Inspection Report

Damage Reference	DN-04	
Damage Category	CAT 3	
Damage Type	Loose Fastener	
Distance From Root (m)	0	
Blade Surface	Suction Side	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Loose fasteners on hub damaging underlying laminate	



Wind Turbine Blade Inspection Report

Damage Reference	DN-05	
Damage Category	CAT 2	
Damage Type	Contamination	
Distance From Root (m)	0	
Blade Surface	Suction Side	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Grease stains on blade.	



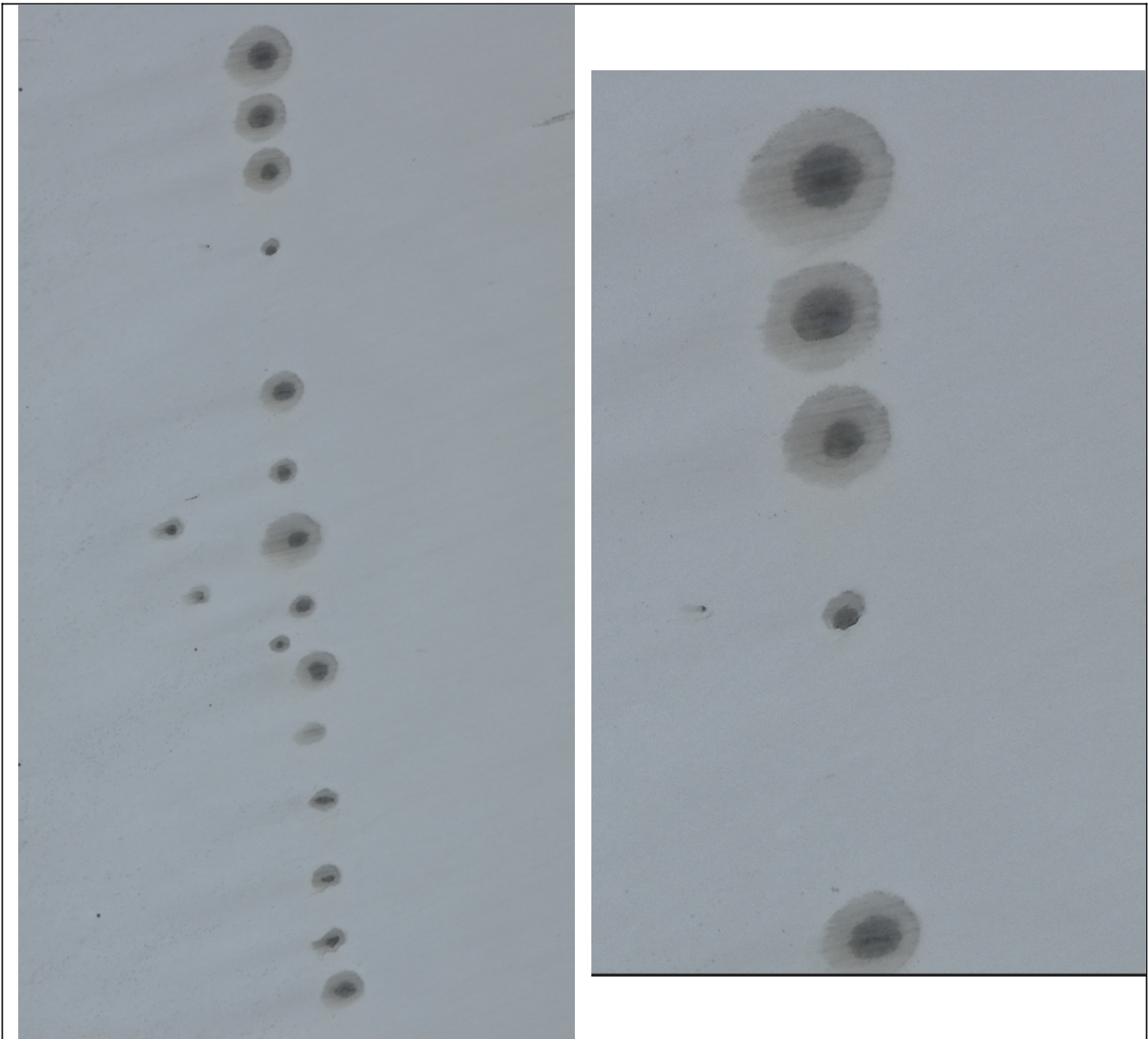
Wind Turbine Blade Inspection Report

Damage Reference	DN-06	
Damage Category	CAT 1	
Damage Type	General observation	
Distance From Root (m)	20	
Blade Surface	Suction Side	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Previous repair - Satisfactory	



Wind Turbine Blade Inspection Report

Damage Reference	DN-07	
Damage Category	CAT 2	
Damage Type	Contamination	
Distance From Root (m)	27	
Blade Surface	Suction Side	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Previous repairs along blade spar. Oil leaking through from the inside.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-08	
Damage Category	CAT 2	
Damage Type	Contamination	
Distance From Root (m)	29	
Blade Surface	Suction Side	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Previous repairs along blade spar. Oil leaking through from the inside.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-09	
Damage Category	CAT 3	
Damage Type	Cracking	
Distance From Root (m)	32	
Blade Surface	Suction Side	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Cracks in top coat. These same cracks appear on some other blades in the same location. Also lightning receptor slightly melted due to lightning strike.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-10	
Damage Category	CAT 2	
Damage Type	Contamination	
Distance From Root (m)	31	
Blade Surface	Suction Side	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Previous repairs along blade spar. Oil leaking through from the inside.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-11	
Damage Category	CAT 2	
Damage Type	Loose	
Distance From Root (m)	0	
Blade Surface	Pressure Side	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Clip has come loose	



Wind Turbine Blade Inspection Report

Damage Reference	DN-12	
Damage Category	CAT 2	
Damage Type	Lightning damage	
Distance From Root (m)	32	
Blade Surface	Pressure Side	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Lightning receptor struck by lightning. Causing topcoat to chip and exposing laminate	



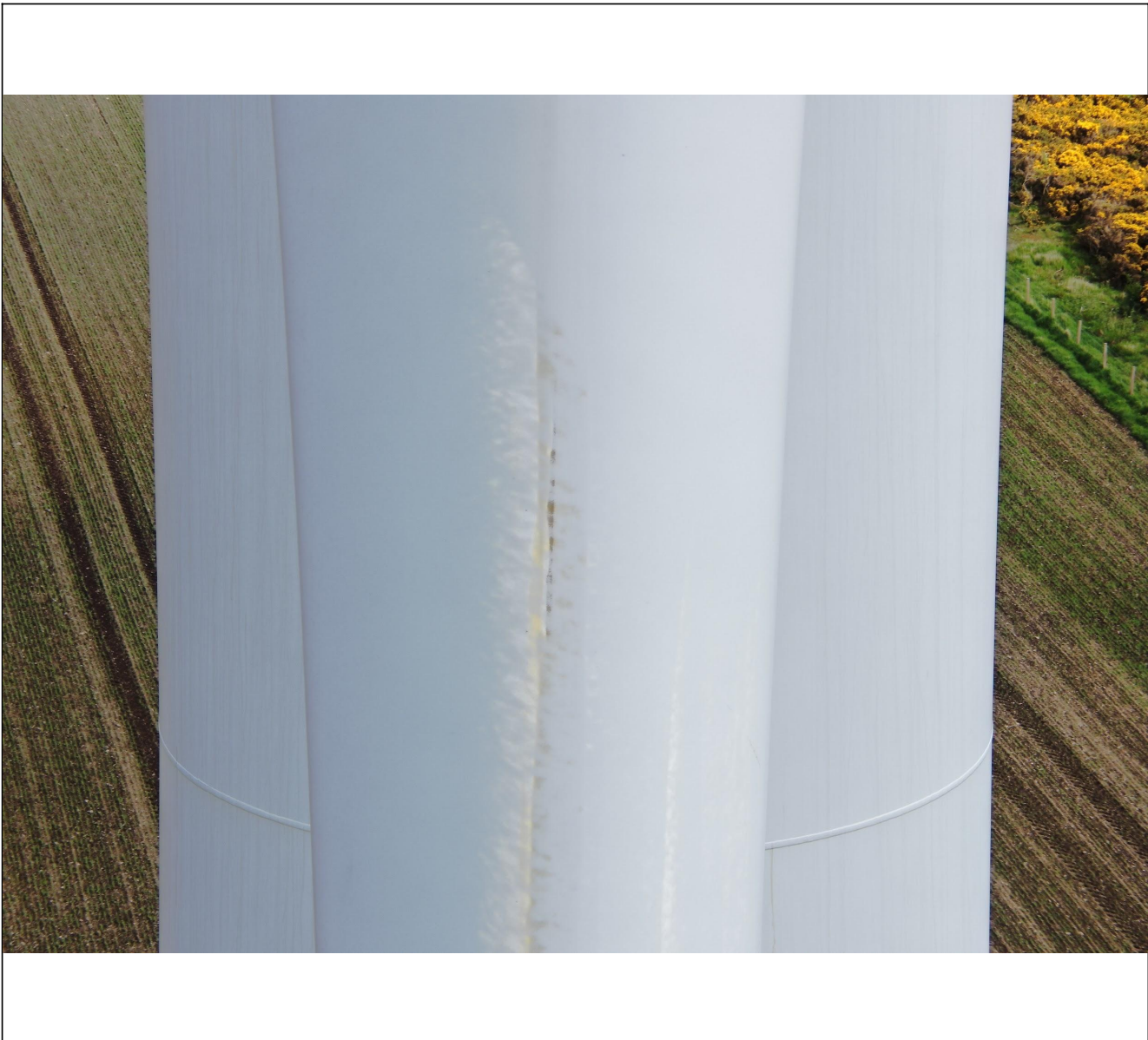
Wind Turbine Blade Inspection Report

Damage Reference	DN-13	
Damage Category	CAT 2	
Damage Type	Out of alignment	
Distance From Root (m)	0	
Blade Surface	Leading Edge	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Rain deflector not flush with spinner	



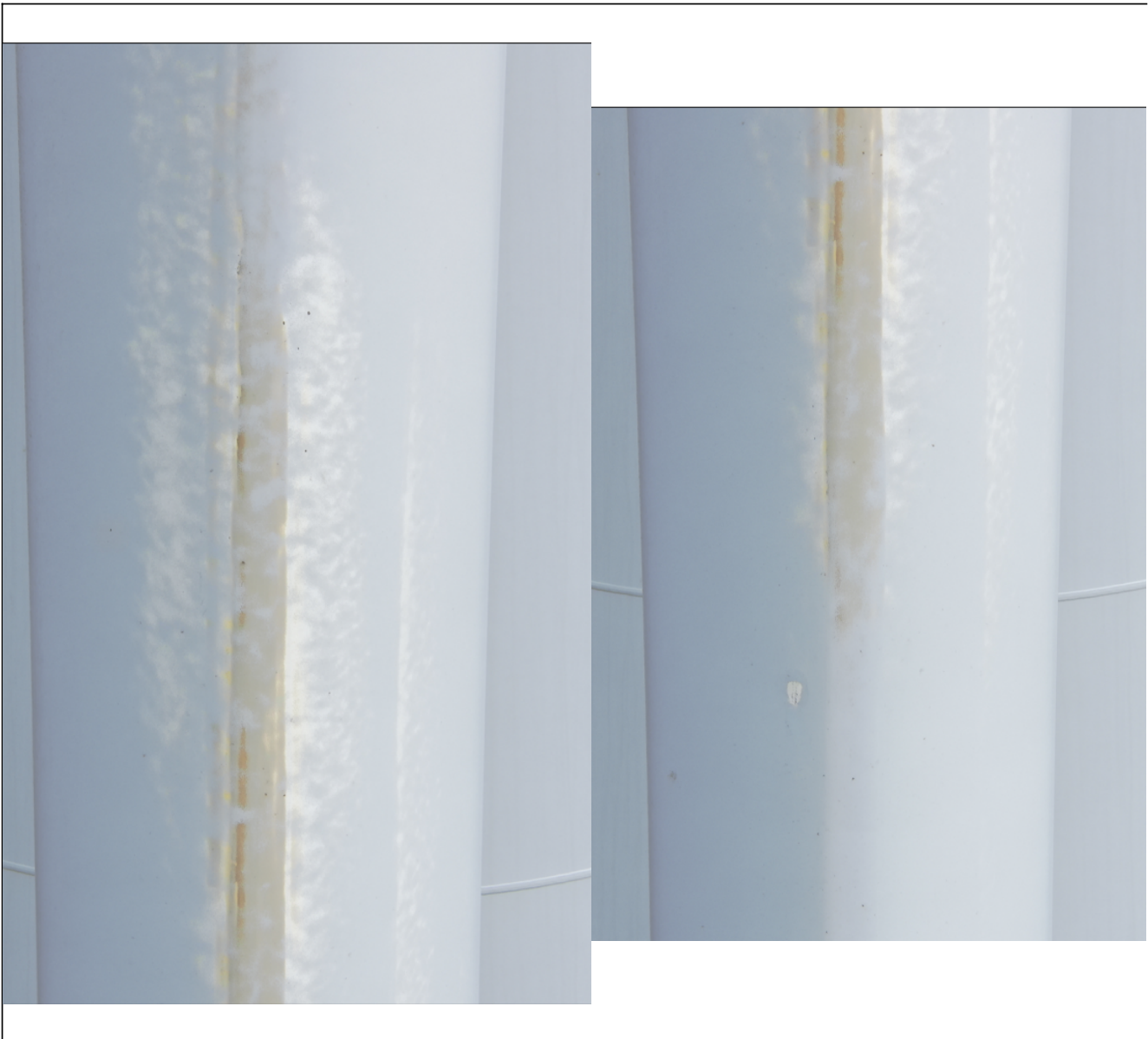
Wind Turbine Blade Inspection Report

Damage Reference	DN-14	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	7	
Blade Surface	Leading Edge	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Topcoat eroded away. Exposing gelcoat.	



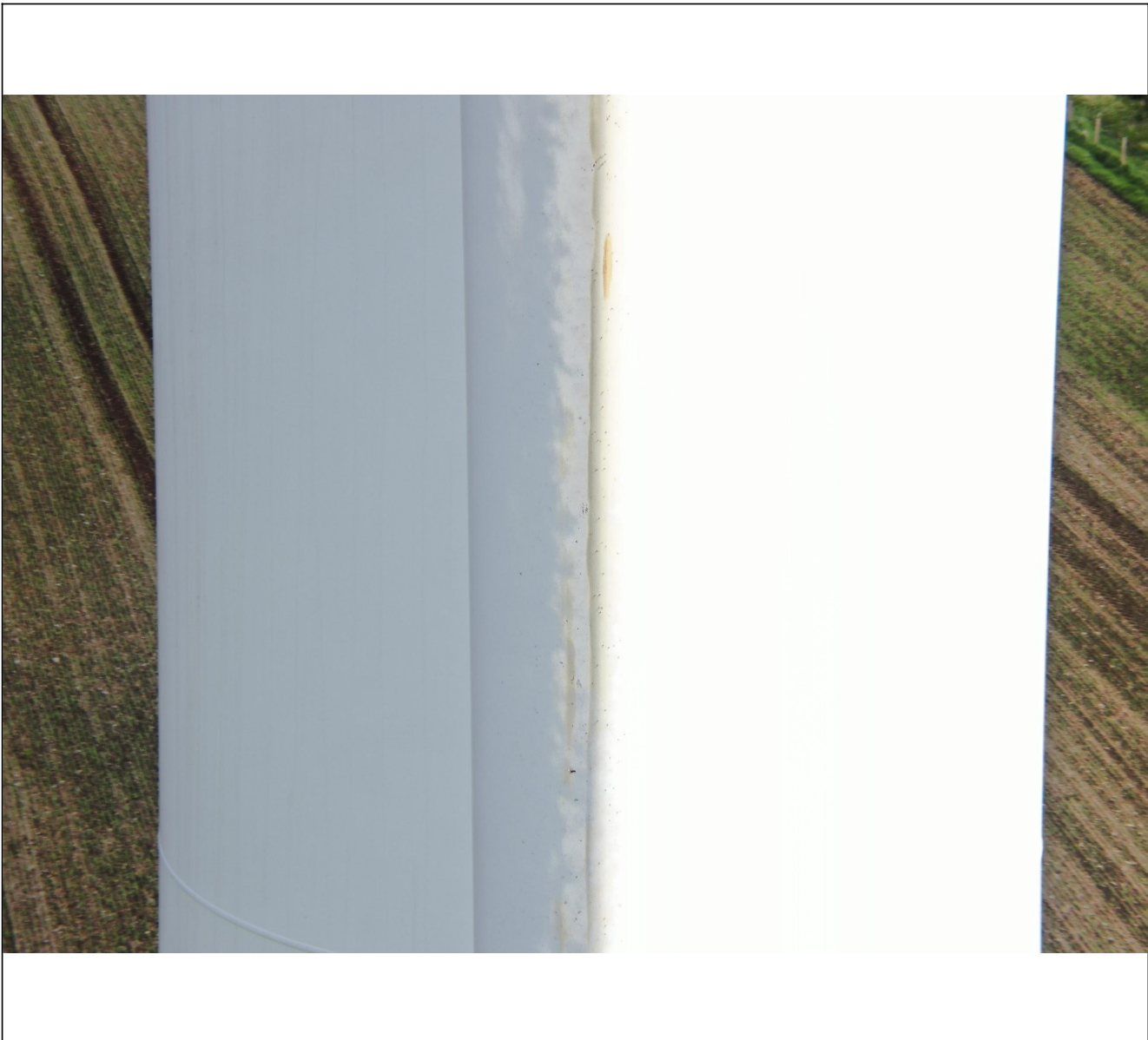
Wind Turbine Blade Inspection Report

Damage Reference	DN-15	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	10	
Blade Surface	Leading Edge	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Topcoat eroded away. Exposing gelcoat.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-16	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	15	
Blade Surface	Leading Edge	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Topcoat eroded away. Exposing gelcoat.	



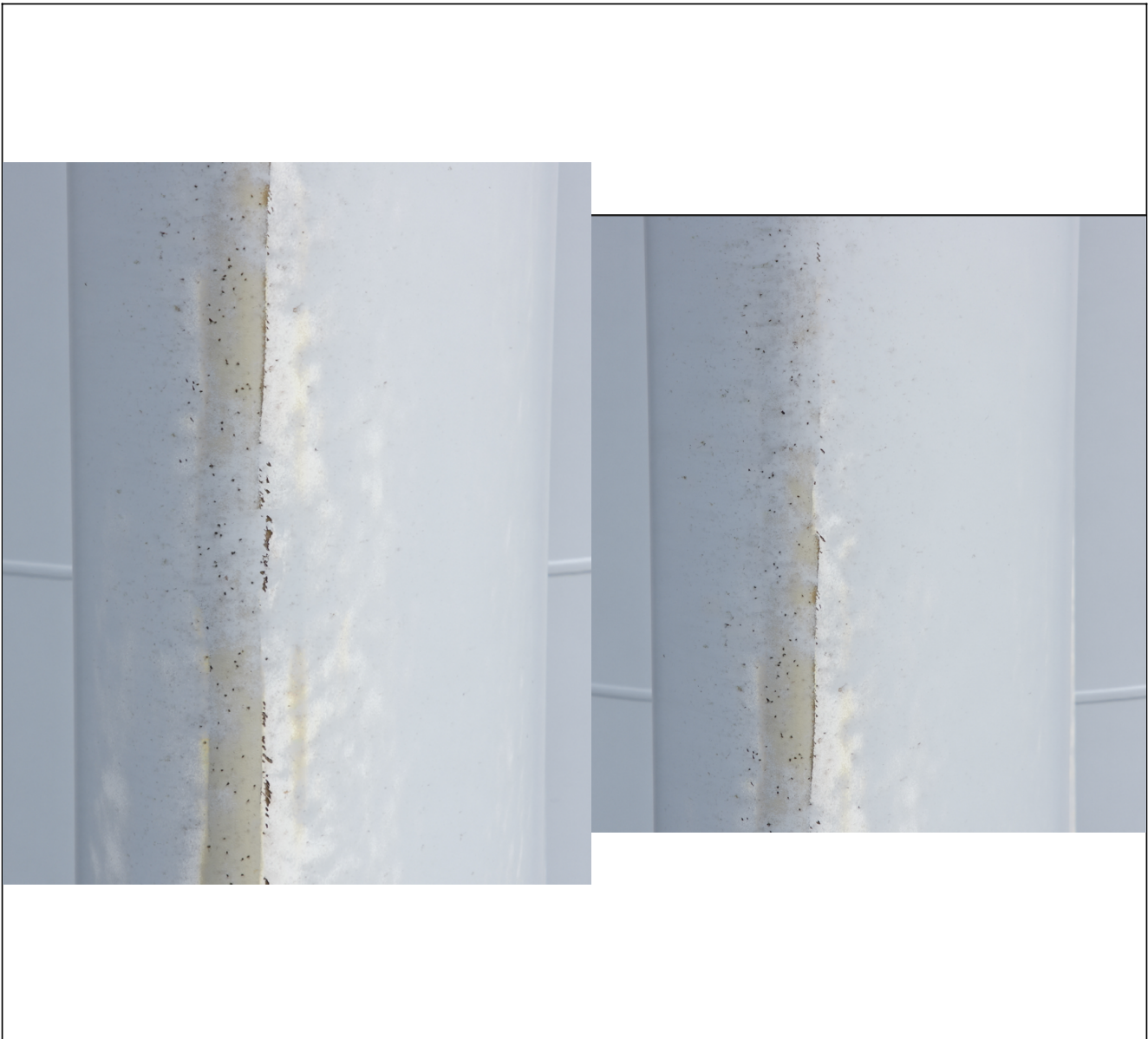
Wind Turbine Blade Inspection Report

Damage Reference	DN-17	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	18	
Blade Surface	Leading Edge	
Blade Letter/Number	A	
Blade SN		
Image Ref.		
Description	Topcoat eroded away. Exposing gelcoat.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-18	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	20	
Blade Surface	Leading Edge	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Topcoat eroded away. Exposing gelcoat and bits of laminate.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-19	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	21	
Blade Surface	Leading Edge	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Topcoat eroded away. Exposing gelcoat and bits of laminate.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-20	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	22	
Blade Surface	Leading Edge	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Topcoat eroded away. Exposing gelcoat.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-21	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	23	
Blade Surface	Leading Edge	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Topcoat eroded away. Exposing gelcoat and bits of laminate.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-22	
Damage Category	CAT 1	
Damage Type	General observation	
Distance From Root (m)	31	
Blade Surface	Suction Side	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Previous repair - Satisfactory	



Wind Turbine Blade Inspection Report

Damage Reference	DN-23	
Damage Category	CAT 2	
Damage Type	Cracking	
Distance From Root (m)	32	
Blade Surface	Suction Side	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Previous repair - Cracking in area that was repaired	



Wind Turbine Blade Inspection Report

Damage Reference	DN-24	
Damage Category	CAT 3	
Damage Type	Loose Fastener	
Distance From Root (m)	0	
Blade Surface	Pressure Side	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Loose fasteners on hub damaging underlying laminate	



Wind Turbine Blade Inspection Report

Damage Reference	DN-25	
Damage Category	CAT 2	
Damage Type	Loose	
Distance From Root (m)	0	
Blade Surface	Pressure Side	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Metal tie has come loose under the rain deflector	



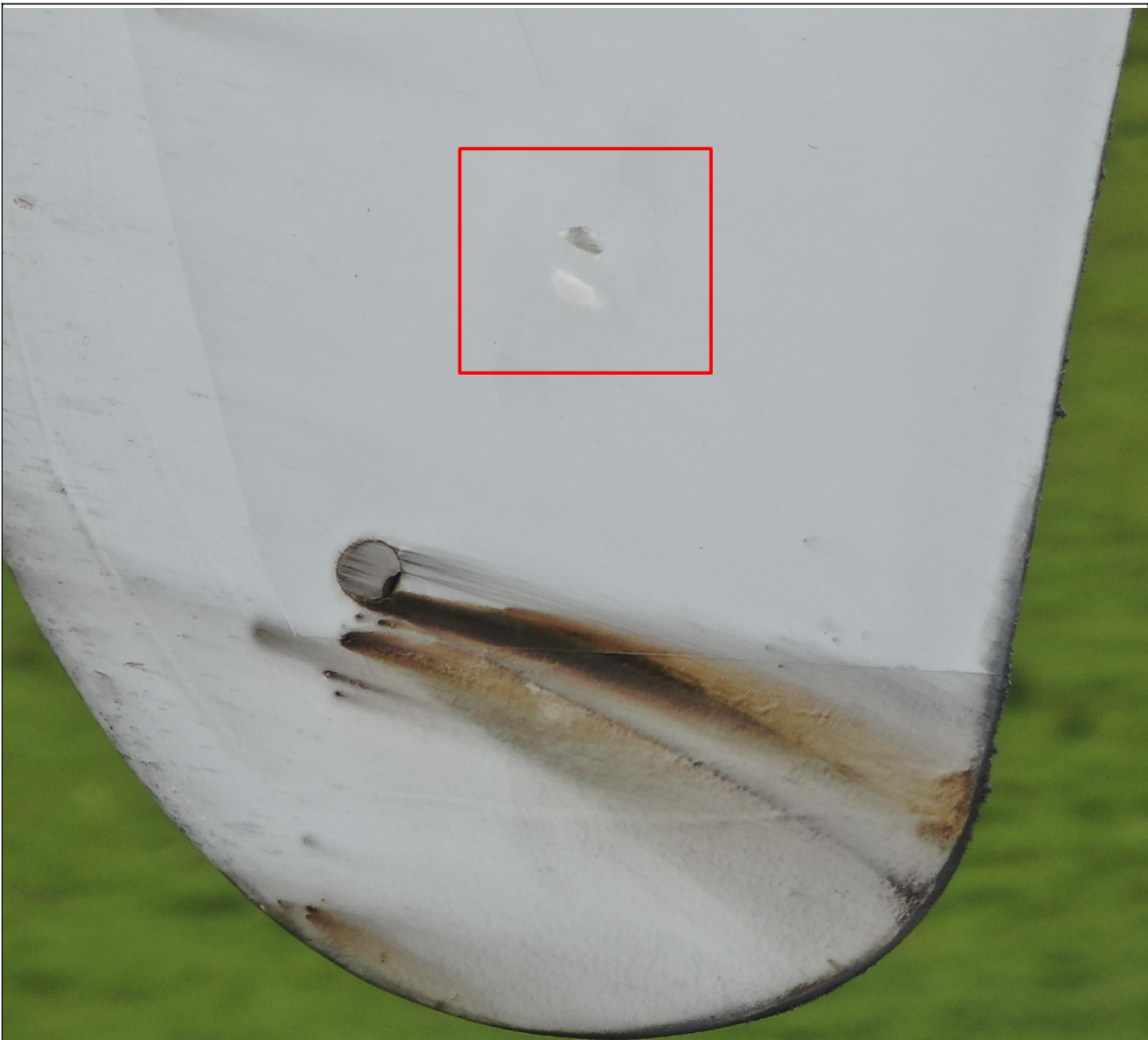
Wind Turbine Blade Inspection Report

Damage Reference	DN-26	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	26	
Blade Surface	Pressure Side	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Topcoat eroded	



Wind Turbine Blade Inspection Report

Damage Reference	DN-27	
Damage Category	CAT 2	
Damage Type	Chipping	
Distance From Root (m)	32	
Blade Surface	Pressure Side	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Chipping to topcoat. Exposing gelcoat.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-28	
Damage Category	CAT 2	
Damage Type	Lightning damage	
Distance From Root (m)	32	
Blade Surface	Pressure Side	
Blade Letter/Number	B	
Blade SN		
Image Ref.		
Description	Lightning receptor hit by lightning and slightly melted.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-29	
Damage Category	CAT 2	
Damage Type	Out of alignment	
Distance From Root (m)	0	
Blade Surface	Leading Edge	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Rain deflector not flush with spinner	



Wind Turbine Blade Inspection Report

Damage Reference	DN-30	
Damage Category	CAT 3	
Damage Type	Loose Fastener	
Distance From Root (m)	0	
Blade Surface	Leading Edge	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Loose fasteners on hub damaging underlying laminate	



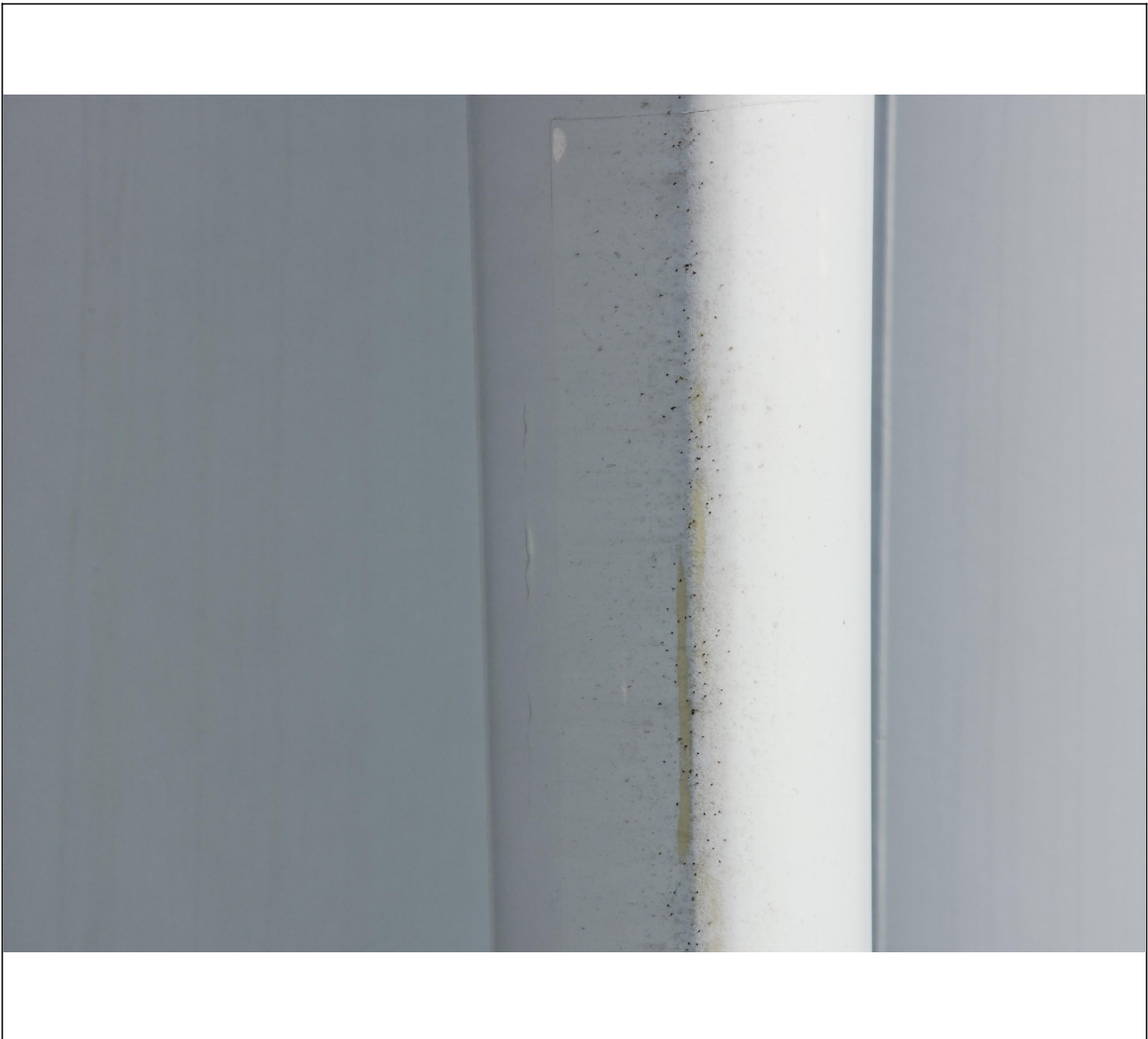
Wind Turbine Blade Inspection Report

Damage Reference	DN-31	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	19	
Blade Surface	Leading Edge	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Chipping to blade exposing laminate.	



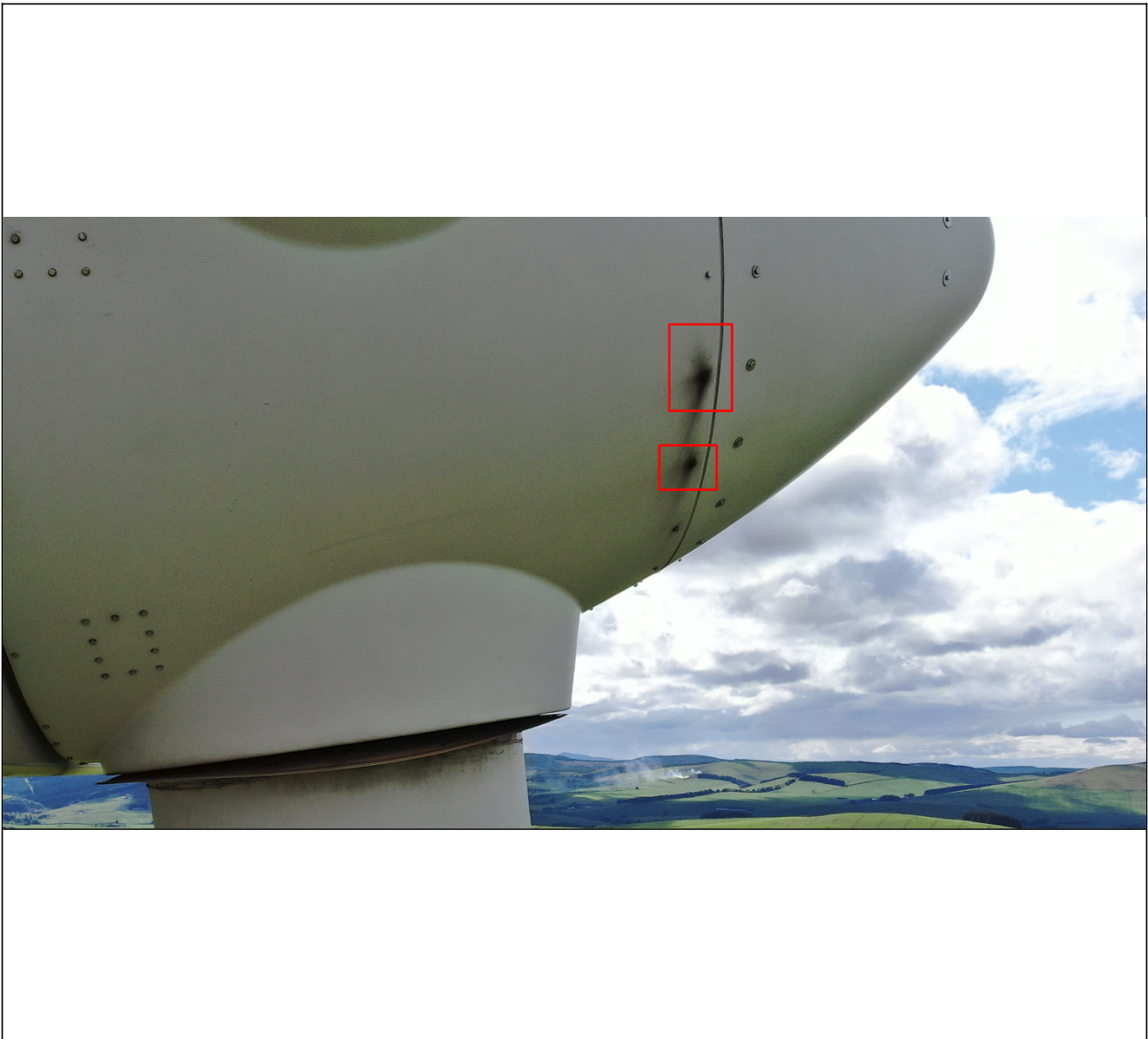
Wind Turbine Blade Inspection Report

Damage Reference	DN-32	
Damage Category	CAT 2	
Damage Type	Erosion	
Distance From Root (m)	20	
Blade Surface	Leading Edge	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Topcoat and gelcoat eroded	



Wind Turbine Blade Inspection Report

Damage Reference	DN-33	
Damage Category	CAT 3	
Damage Type	Loose Fastener	
Distance From Root (m)	0	
Blade Surface	Suction Side	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Loose fasteners on hub damaging underlying laminate	



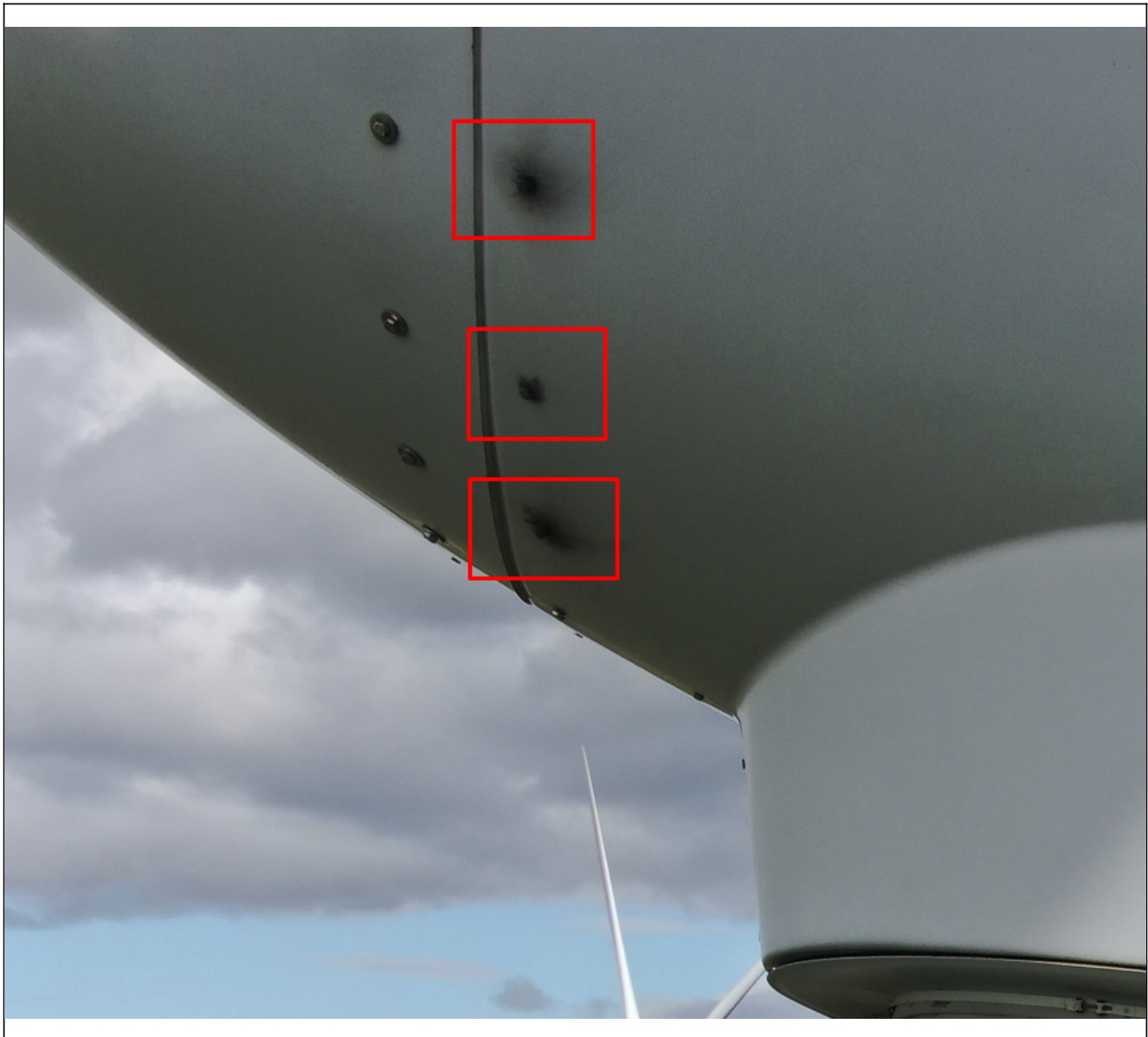
Wind Turbine Blade Inspection Report

Damage Reference	DN-34	
Damage Category	CAT 3	
Damage Type	Contamination	
Distance From Root (m)	31	
Blade Surface	Suction Side	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Previous repairs along blade spar. Oil leaking through from the inside.	



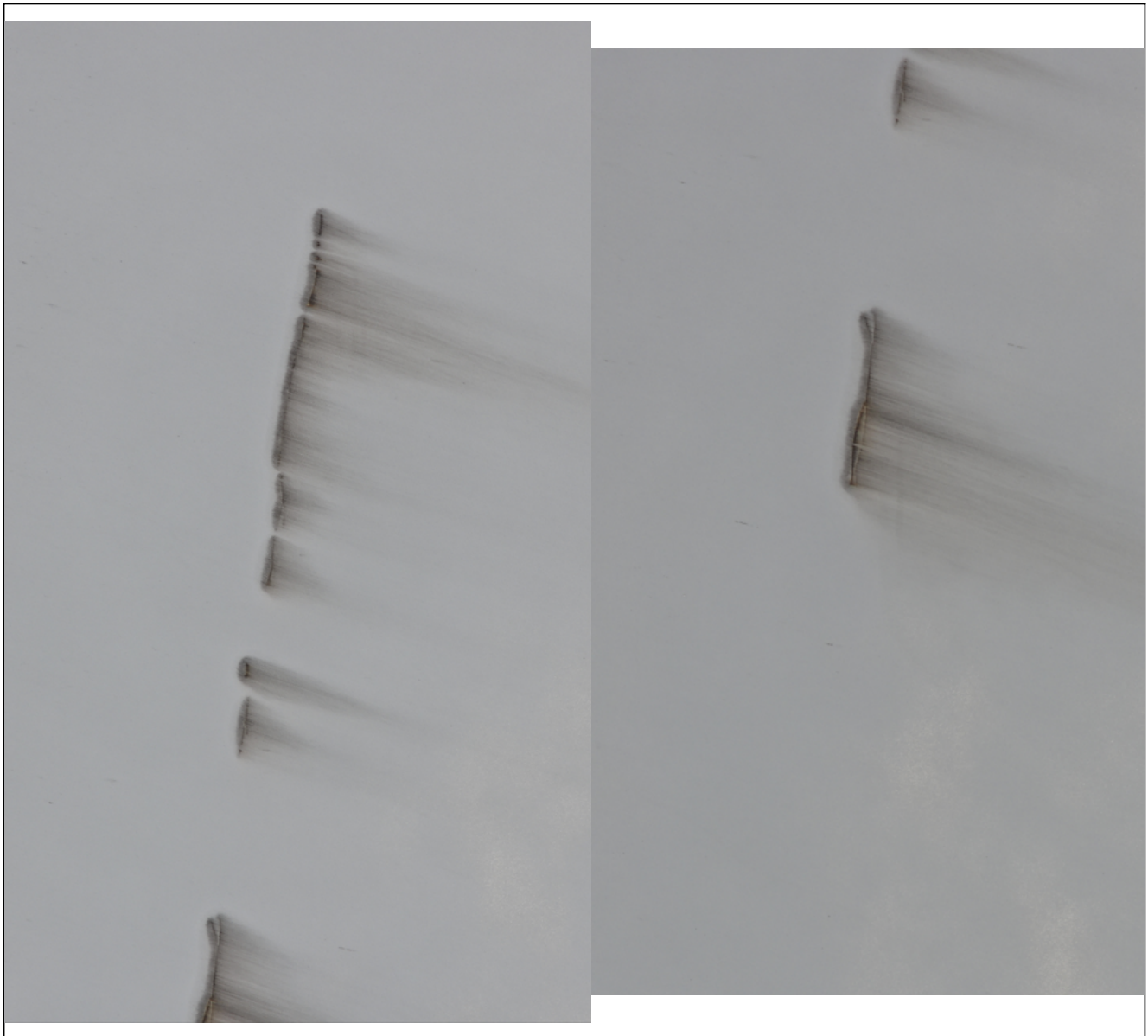
Wind Turbine Blade Inspection Report

Damage Reference	DN-35	
Damage Category	CAT 3	
Damage Type	Loose Fastener	
Distance From Root (m)	0	
Blade Surface	Pressure Side	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Loose fasteners on hub damaging underlying laminate	



Wind Turbine Blade Inspection Report

Damage Reference	DN-36	
Damage Category	CAT 2	
Damage Type	Cracking	
Distance From Root (m)	27	
Blade Surface	Pressure Side	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Cracks in topcoat and gelcoat.	



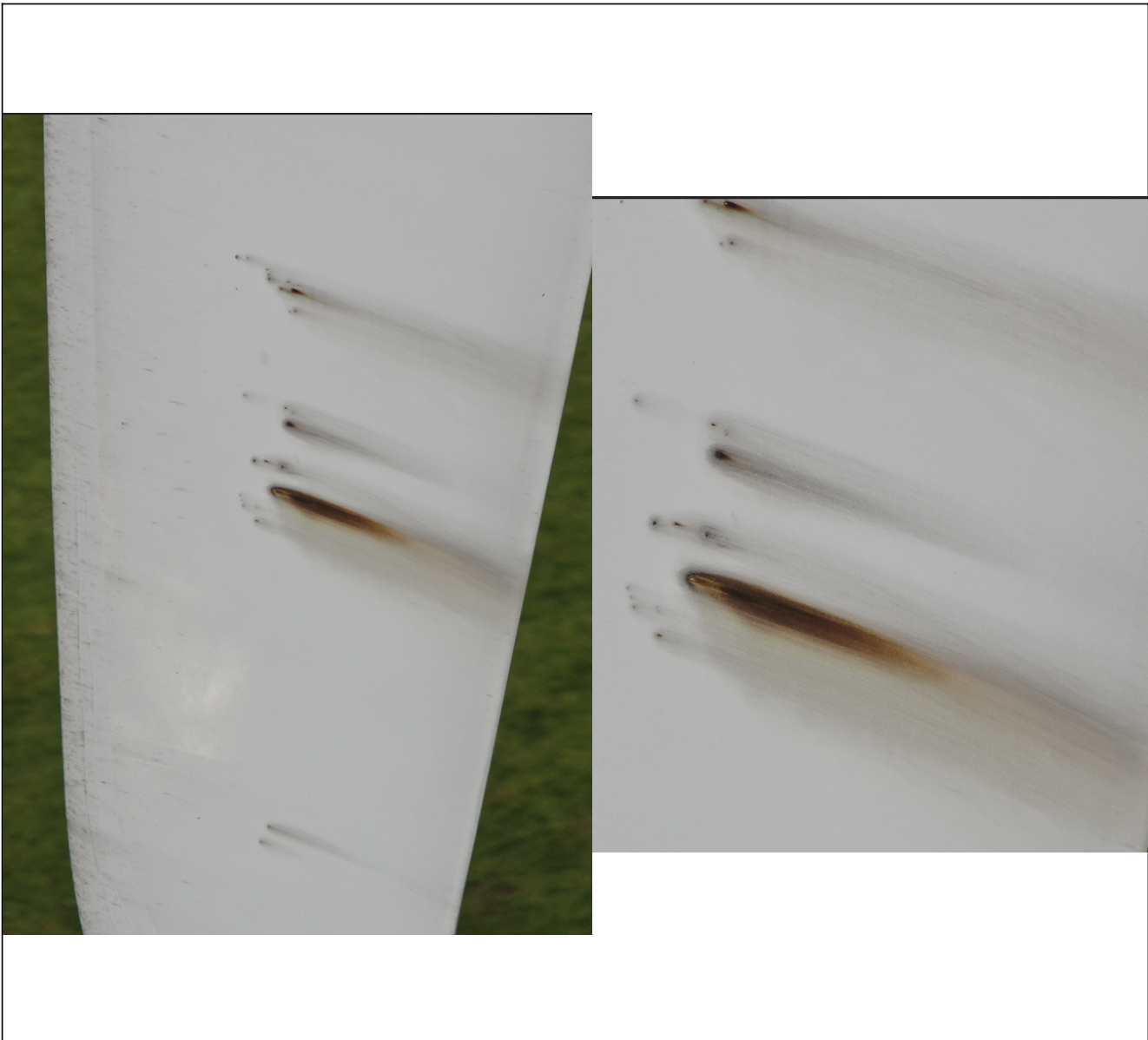
Wind Turbine Blade Inspection Report

Damage Reference	DN-37	
Damage Category	CAT 2	
Damage Type	Contamination	
Distance From Root (m)	31	
Blade Surface	Pressure Side	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Previous repairs along blade spar. Oil leaking through from the inside.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-38	
Damage Category	CAT 2	
Damage Type	Contamination	
Distance From Root (m)	32	
Blade Surface	Pressure Side	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Previous repairs along blade spar. Oil leaking through from the inside.	



Wind Turbine Blade Inspection Report

Damage Reference	DN-39	
Damage Category	CAT 2	
Damage Type	Lightning damage	
Distance From Root (m)	32	
Blade Surface	Pressure Side	
Blade Letter/Number	C	
Blade SN		
Image Ref.		
Description	Lightning receptor hit by lightning and slightly melted	

