

ELLE® Onshore Up-Tower Installation

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1. General Information

1.1 Change Description

The table below describes changes compared to the previous revision of the document.

Section	Description
Document name & cover page	Version 6.0 Rename document name to: <i>LE-I038 6.0-en ELLE® Onshore Up-Tower Installation</i>
All	Align bullets in all sections
Section 3.5 Step 2	Version 5.1 Minor editorial changes
Section 1.2	Version 5.0 Updating table
Section 2.2	Adding new section (Work preparation)
Section 3.3 Step 2, 3 & 4	Adding new steps
Section 3.3 Step 6	Updating text section
Section 3.4	Removing text section
Section 3.5 Before starting	Adding picture and text
Section 3.5 Step 2 (5)	Replace text section
Section 3.5 Step 3 (photo 2)	Updating text section
Section 3.5 Step 3 (photo 3)	Updating text section
Section 3.5 Step 3	4 pcs of photos and text removed
Section 3.5 Step 3	Adding picture and text
Section 1.4	Version 4.0 Adding text: SDS 3M™ Primer 94 & 3M™ Tape Primer 94 & SDS ELLE Onshore EN 2025.05.26 V0
Section 2.2	Adding text: 3M™ Tape Primer 94
Section 3.5	Step 3. Adding Note
Section 3.2	Version 3.0 Minor text changes and Notes: Step 1
Section 3.4	Step 1, Step 2, Step 3
Section 3.5	Step 3
Section 4	Discontinuation of Application (new section)
Section 3.5	Version 2.1 Text ref. adjustments in: Step 2 (5), Step 3 & Step 4 (1,7)
Section 3.1 & 3.5	Version 2.0 Document name changed from: <i>LE-I038-1.0-en-Application_of_ELLE_ON</i> to <i>LE-I038-2.0-en-Application_of_ELLE_Onshore-Up-tower.</i> Re – arrange steps, text and new pictures
All	New document. (Version 1.0)

1.2 Safety

Use the necessary PPE according to the rules and regulations in the specific countries and sites.



For all tasks

Wear foot protection.



For all tasks

Wear eye protection.



For all tasks

Wear protective gloves.



For tasks where sufficient venting is not possible

Wear respiratory protection.

- Recommended filter type: A2, P2.



For all tasks. Wear Harness.



For all tasks. Wear helmet.

Before accessing the blade, the rotor must be mechanically locked and LOTO (Lockout/Tagout) must be performed.

1.3 Icons and Notes

The table below defines the meaning of icons that appear in this document.

Icon	Definition
	Caution or Warning Details about risk of personal injury.
	Note Details about risk of property damage.
	Reference to additional documentation.
	Details about time constraints.

1.4 Required Documentation

The table below lists other required documentation.

Safety Data Sheet	■ IPA Sprit 95% (minimum) Polytech ■ 3M™ Wind Tape Adhesion Promoter W9910-1 ■ SDS 3M™ Primer 94 ■ SDS ELLE® Onshore EN 2025.05.26 V0
Technical Data Sheet	■ LE-D043 ELLE® Onshore Technical Data Sheet ■ 3M™ Wind Tape Adhesion Promoter W9910-1 ■ 3M™ Tape Primer 94
Appendix	■ LE-I039 ELLE® Onshore Installation Around Obstacles

1.5 Abbreviations

The table below defines the abbreviations used in this document.

Abbreviation	Full Form
IPA	Isopropanol Alcohol
LE	Leading Edge
OEM	Original Equipment Manufacturer
PPE	Personal Protective Equipment
PS	Pressure side of the blade
SS	Suction side of the blade

2. Preparation

2.1 Environmental Conditions

The table below defines the temperature and humidity requirements during installation.



Refer to Technical Data Sheets for storage and transportation requirements.

Property	Value	Unit
Surface temperature	10 ... 35	°C
	50 ... 95	°F
Relative humidity	0 ... 100	%

2.2 Work preparation

Blade shall be at the 6 o' clock position with appropriate access to both sides of LE, for the length of the work area. Turbine is preferably yawed into the wind so that preparation dust blows away from the LE.

2.3 Tools and Consumables

The table below defines the required tools and consumables.

Tools	
Item	Type
Application roller	Special Polytech tool
Application scraper	Plastic spatula with felt
Sander	-
Measuring tape	-
Permanent marker	Carbon-free
Scissor	-
Spray bottle	-

Consumables	
Item	Type
Adhesion promoter	3M™ Wind Tape Adhesion Promoter W9910-1 3M™ Tape Primer 94
Application solution	Mixture of 95% (minimum) isopropanol and demineralized water. Mixing ratio: 75% water / 25% isopropanol.
Cleaning agent	Isopropanol 95% (minimum) Alternative: Soap (neutral)
Cloths	Lint-free
Masking tape	-
Sanding disc	Grit 220 to 240
Sandpaper	Grit 220 to 240

3. Installation

3.1 Inspection and Repair of Leading Edge

Step 1

Inspect the leading edge for any erosion or damages.

- If no erosion is found, continue to [3.2](#) *Cleaning of Surface*.



Step 2

If severe erosion causing structural damage is detected, it must be repaired according to the blade manufacturers specifications. Light erosion can be reworked with blade filler.



Step 3

The installation surface must be smooth without any holes, dents or loose material and must be covered with:

Preferred: Solvent-free filler.

Alternative: Solvent-based filler/coat/paint - "If solvent-based blade coat/paint/paint/filler is used it is important that full evaporation of solvent is completed before applying *ELLE® Onshore*".

Local areas in the installation area with no blade filler or blade coat/paint can be accepted if there are no signs of exposed or dry fibers.

**Note:**

Do not apply *ELLE® Onshore* on freshly painted or uncured surfaces.

**Note:**

Any uncoated/unpainted areas outside the installation area can be coated/painted after finalized installation. Don't apply coat/paint onto the *ELLE® Onshore*.

**End**

3.2 Cleaning of Surface

Step 1

- 1 The substrate must be cleaned/washed to remove any contamination, for instance salt sediment or insects.
- 2 After the substrate has been cleaned it must be wiped with Isopropanol (minimum 95%)

**End**

3.3 Marking of Application Areas

Step 1

Make a 29 centimeter wide template of a flexible material and draw a line through the centre of it.



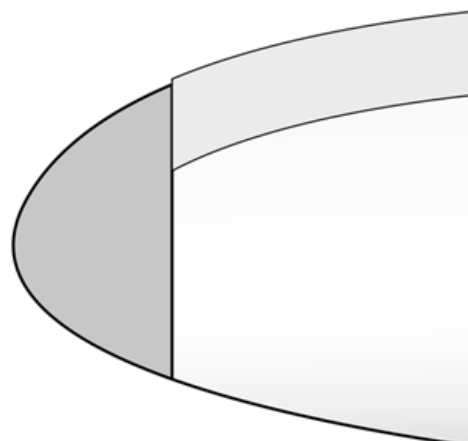
Step 2

Mark the desired start point of sanding area by placing a piece of masking tape across the blade 10 mm $\pm$ 5. closer to the tip-end than the desired tip-start position.



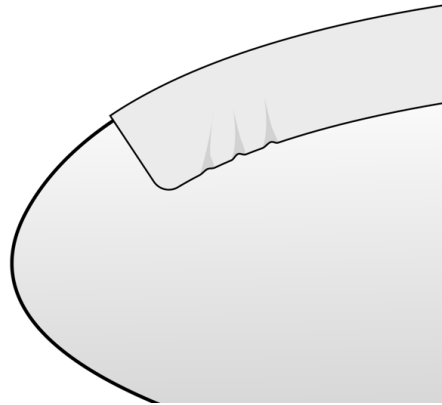
Note:

It is not recommended to install *ELLE® Onshore* on a solid metal tip (SMT). The *ELLE® Onshore* should be installed as close to the blade tip as possible without overlapping onto the Solid Metal Tip (SMT)



Step 3

Determine what tip-shape is needed to avoid un-installable waves on the sides of *ELLE® Onshore*. This can be determined by pressing/holding the *ELLE® Onshore* onto the tip, without removing the back liner.

**Step 4**

If the delivered tip template profile is chosen, the template can be used for determining the sanding area. Apply masking tape approx. 10 mm. wider to each side of the desired tip-installation area to define the sanding area.



Measure the desired application length from the TIP-end and put masking tape across the spot where the *ELLE® Onshore* shall end towards the ROOT.



Step 5

Use the premanufactured template by centering it on the LE and mark with a permanent marker at each side of it.

**Note:**

Do NOT use a black marker or a pencil.

Do this for approx. each 0.5 meter of the installation area.

**Step 6**

Apply the masking tape in a straight line along the side marks on both sides of the blade (SS & PS) .

**Note:**

Do not cover the marks.

**End**

3.4 Sanding of Surface

Step 1

Sand the entire masked application area.

- Use sandpaper grit 220 to 240.
- Shiny areas on the sanded surface after sanding are NOT accepted.



Note: Take care not to sand through the blade paint/coat the last 20 mm. towards the masking tape. Hand sanding this area can be a solution.



Step 2

Remove dust using a hand brush, air-blower or vacuum cleaner starting from the top and moving downwards.

- 1 When brushing/blowing/vacuuming is finalized go back to the top and spray the surface with Isopropanol (minimum 95%) and wipe the surface with a lint free cloth. Change the cloth regularly.
- 2 When finished wiping with IPA, go back to the top and repeat the process one more time.

If dust is still present on the surface, repeat the wiping process until the surface is dust free.



Note: It is very important that the surface is only brushed/wiped in the downwards direction.



Note: Make sure to clean dust from the surrounding surfaces to avoid contamination of the installation surface.



Step 3

Apply a thin layer of adhesion promoter on the blade, using a damp, lint-free cloth. (*For choice of adhesion promoter See: page 7 Consumable list*)



Allow the adhesion promoter to dry for 10 minutes. *ELLE® Onshore* must be applied within 2 hours after activating the blade.



Note: Runs and drips of *Adhesion Promoter* on the substrate must be avoided.

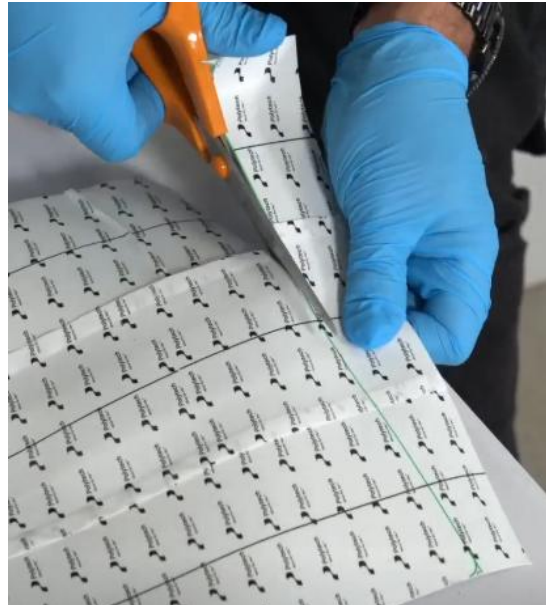
**End**

3.5 Application of *ELLE® Onshore*

Before Starting

Make a clean 90° cut at the start of the *ELLE® Onshore* roll and cut a minimum 10 mm. radius on all corners. The corner of the delivered red scraper can be used as template for the radius in the corners.



**Step 1**

- Start the installation from the ROOT position.
- The area of *ELLE® Onshore* covered with the center liner must be installed on a dry surface.
- If necessary the area of *ELLE® Onshore* covered with the side liners can be installed with a slight use of application solution.

**Note:**

The application solution can help re-position *ELLE® Onshore*. Special attention must however be made in ensuring the application solution is completely removed from the interface. Leaving application solution in the interface can cause bubbles to enlarge after application is finalized.

Make application solution by mixing demineralized water and 95% (minimum) isopropanol and put the application solution into a spray bottle.



Note: Mixing ratio: 75% demineralized water, 25% isopropanol.

Step 2

- 1 Remove the center liner from *ELLE® Onshore* without touching the pressure sensitive adhesive with bare hands.
- 2 Apply *ELLE® Onshore* in the center of the masked application area, without covering any of the masking tape.

**Note:**

Do: Apply *ELLE® Onshore* without stretching it and allow the material to conform naturally to the surface.

Don't: Overstretch *ELLE® Onshore* during application.

**Note:**

If struggling to position the *ELLE® Onshore* centred in the installation area, centre alignment marks can be made for each meter using the pre manufactured template. Do **NOT** use black marker or pencil.

- 3 Use the application roller to fix *ELLE® Onshore* to the leading edge of the blade and remove all air entrapments. All of *ELLE® Onshore* must be pressure activated with the application roller with approx. 5 kg. pressure.

**Note:****Do:**

Apply firm, even pressure everywhere .
Overlap roller passes slightly.
Roll slowly and evenly.

Don't:

Press with fingers and/or hands
Press lightly or unevenly
Miss corners, edges or center areas

There is a higher risk of trapping air if *ELLE® Onshore* is applied all at once.
Start from one end and gradually move downwards.



- 4 Stop the application approx. 0.5 meter from the tip, and remove the loose liner material.



Note: Step 2 & 4 can be performed as you go down the blade, but recommendation is, that Step 2 and 3 is finalized before starting Step 4.

Step 3

Cut the *ELLE® Onshore* a few centimeter longer than the TIP-end.



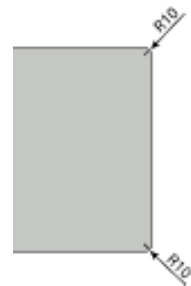
Cut the *ELLE® Onshore* into the desired shape.



Note: When making your own tip cut design it's recommended that the *ELLE® Onshore* width is minimum 80 mm.



If trimming of the *ELLE® Onshore* isn't necessary, then make a clean 90° cut at the desired length and cut a minimum 10 mm. radius on both corners. The corner of the delivered red scraper can be used as template for the radius in the corners.

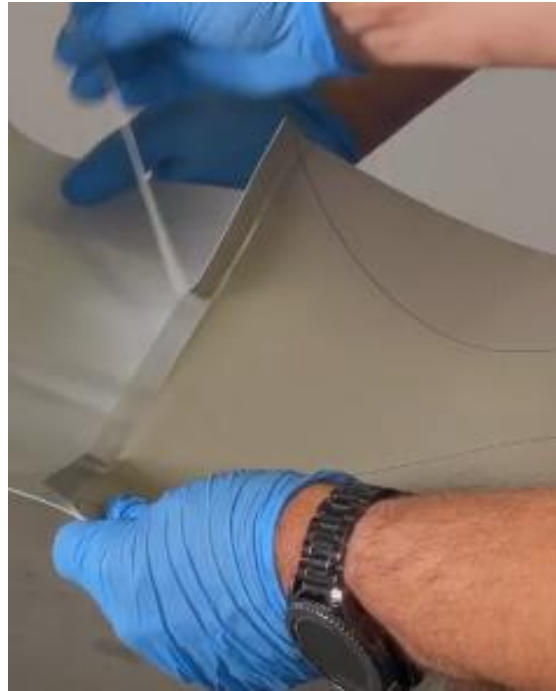


If the delivered template is used do the following:

- 1 Put a piece of masking tape to mark the desired length of the *ELLE® Onshore*.
- 2 Put the template to the length mark and center the template on the *ELLE® Onshore*.



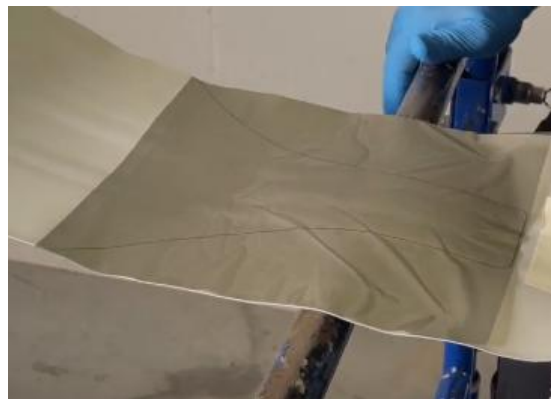
- 3** Remove the liner strip from the template to attach the template.



- 4** Attach the template



- 5** Remove the rest of the liner and apply the template.



- 6** Cut along the lines of the template



7 Remove the template



8 Apply the *ELLE® Onshore* as described in section 3.5 Step 2.



Step 4

- 1 Go back to the installation start position towards the root and apply both sides of the *ELLE® Onshore*.
- 2 Remove the side liner from *ELLE® Onshore* without touching the pressure sensitive adhesive with bare hands.
- 3 If necessary a slight use of application solution can be used, but not more than it doesn't start to run down the blade.
- 4 Remove air and water entrapments using an application scraper, scraping from the center of the leading edge to each side. Overlap scraper passes slightly.
- 5 All area of *ELLE® Onshore* must be pressure activated with the application roller with approx. 5 kg. pressure.
- 6 When no air and water entrapments are left, the masking tape can be removed.

**Note: Do:**

Apply firm, even pressure everywhere
Overlap roller passes slightly
Roll slowly and evenly

Don't:

Press with fingers and/or hands
Press lightly or unevenly
Miss corners, edges or center areas

There is a higher risk of trapping air if *ELLE® Onshore* is applied all at once. Start from end and gradually move downwards.



Appendix: If there are any obstacles in the installation area, please use: *LE-I039 ELLE® Onshore Installation around obstacles* - for applications concerning this issue.

Step 5

After completing the application, wait 1 hour before putting the wind turbine into operation.

End

4. Discontinuation of Application.

4.1 Interrupted Application

If the application of *ELLE® Onshore* must stop before full installation is completed, perform the steps below.

Step 1

- 1 Make a clean 90° cut across the *ELLE® Onshore*.
- 2 Apply the *ELLE® Onshore* in accordance with the installation instruction.



Note

Do not make radius cut in the corners.



Step 2



After completing the application, wait 1 hour before putting the wind turbine into operation.

End

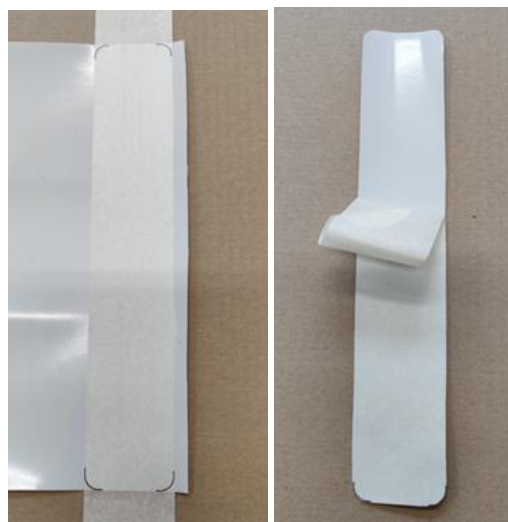
4.2 Continuation of Application After Interruption

When continuing the application of *ELLE® Onshore* perform the steps below.

Step 1

Preparation of overlap piece.

- 1 Apply a piece of 50 mm masking tape straight across the *ELLE® Onshore* material and draw a 10 mm radius in each corner.
- 2 Cut along the edges of the masking tape and around the corners and remove the masking tape.

**Step 2**

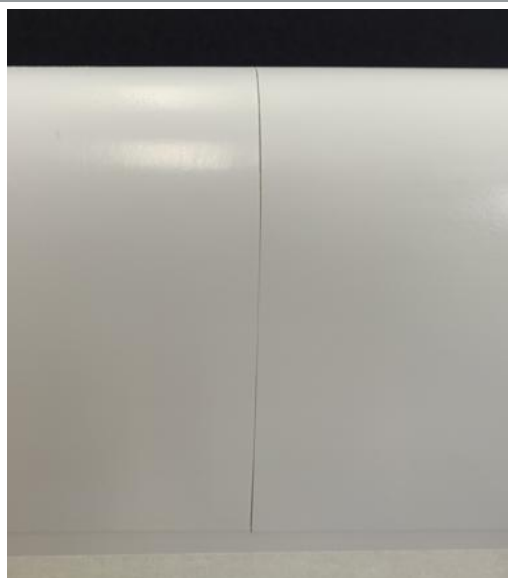
Prepare the *ELLE® Onshore* installation area in accordance with the installation instruction.

Step 3

Apply the *ELLE® Onshore* in accordance with the installation instruction, leaving a gap of no more than 2 mm. to the already installed piece.

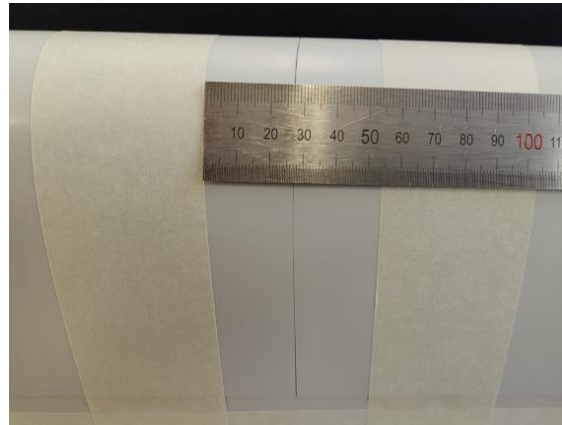
**Note**

Do not make radius cut in the corners.



Step 4

Apply a piece of masking tape across the *ELLE® Onshore* 27 mm. $\pm 3/-0$ mm. to each side of the connection.

**Step 5**

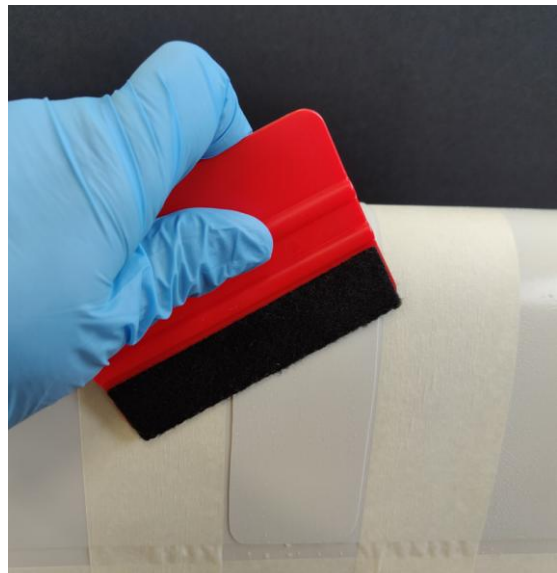
Apply a thin layer of adhesion promoter on the blade, using a damp, lint-free cloth. (For choice of adhesion promoter See page 6 Consumable list).



Allow the adhesion promoter to dry for 10 minutes. *ELLE® Onshore* must be applied within 2 hours after activating the blade.

**Step 6**

- 1 Remove the liner material and apply the prefabricated overlapping piece centered in the prepared area.
- 2 Spray the overlapping piece with application solution and remove the air and water entrapments using an application scraper, scraping from the center of the leading edge to each side.



- 3** Use application roller to remove any air entrapments.



- 4** Remove the masking tape.



Step 5



After completing the application, wait 1 hour before putting the wind turbine into operation.

End

5. Technical Support

E-mail

support@polytech.com

Answers will be sent within one working day.

Please include the following information in your support request:

- Product name.
- Product type.
- Serial number.
- Description of the problem, including detailed, high-resolution pictures.