INSTALLATION INSTRUCTION

Polytech
Wind for life™

Application of ELLE® Onshore Hybrid Installation

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Table of Content

1. General Information

1.1 Change Description

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

Section	Description
	Version 3.0
Section 1.4	Adding 3M™ Wind Tape Adhesion Promoter W9910-1.
Section 1.4	Adding 3M™ Tape Primer 94
Section 3.2	Adding section 3.3 from LE-I038 instruction w. minor text adjustments.
Section 3.3	Adding section 3.3 from LE-I038 instruction but without note.
Section 3.3	Adding “air blower” in step 2.
Section 3.4	Adding “sealing” in step 7 note after “chamfer”.
Section 3.5	Change value “3.2 to “3.5” in step 3.
Section 3.8	Adding “with Isopropanol (minimum 95%)” in step 10.
	Version 2.0
Section 1.4	Remove: *3M™ Wind Tape Adhesion Promoter W9910-1*.
Section 1.4	Adding: *Sika® Aktivator-205 UK* & *CENTAUR 960-SDS*.
Section 1.4	Adding: *Sika® Aktivator-205* & *AC-D002 Centaur 960*.
Section 1.4	Adding: *SDS ELLE Onshore EN 2025.05.26 V0*
Section 2.2	Consumables table: Remove: *3M™ Wind Tape Adhesion Promoter W9910-1*.
Section 2.2	Adding: Consumable tabel: Centaur 960.
Section 3.3	Step 1. Add: *LE-I058_Application_of_ELLE_Onshore Factory*.
Section 3.4	Step 2. Replace text ref. with*: LE-I038-Application of ELLE Onshore Up-tower*.
All	New document. (Version 1.0)

1.2 Safety

Wear PPE as defined in the table below.

	**For all tasks** Wear foot protection.
	**For all tasks** Wear eye protection.
	**For all tasks** Wear protective gloves.
	**For all tasks** Wear protective clothing (long-sleeved work clothing).
	**For tasks where sufficient venting is not possible** Wear respiratory protection. ■ Recommended filter type: A2, P2.

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	■ CENTAUR 960-SDS ■ 3M™ Wind Tape Adhesion Promoter W9910-1 ■ 3M™ Tape Primer 94 ■ IPA Sprit 95% (minimum) Polytech ■ SDS ELLE Onshore ■ Sika® Aktivator-205 UK
Technical Data Sheet	■ AC-D002 Centaur 960 ■ 3M™ Wind Tape Adhesion Promoter W9910-1 ■ 3M™ Tape Primer 94 ■ LE-D043 ELLE Onshore Technical Data Sheet ■ Sika® Aktivator-205
Installation manual	■ LE-I007-Standard_Application_of_ELLE

1.5 Abbreviations

The table below defines the abbreviations used in this document.

Abbreviation	Full Form
IPA	Isopropanol Alcohol
PPE	Personal Protective Equipment
WTG	Wind Turbine Generator

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 50 ... 95	°C °F
Relative humidity	0 ... 100	%

2.2 Tools and Consumables

The table below defines the required tools and consumables.

Tools	
Item	**Type**
Application gun	-
Application roller	Special Polytech tool
Application Scraper	Plastic spatula with felt
Measuring tape	-
Permanent marker	Carbon-free
Roller	-
Safety knife	-
Sander	-
Scissor	-
Spray bottle	-
Consumables	
Item	**Type**
Adhesive	Centaur 960
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
Surface activator	Sika® Aktivator-205

3. Installation

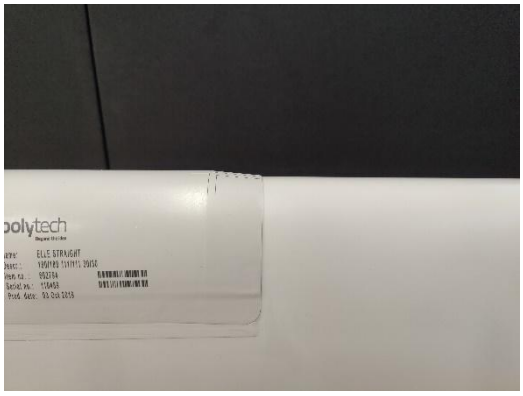
3.1 ELLE® installation

Step 1

Install ELLE® according to: *LE-I007-Standard_Application_of_ELLE*

Step 2

Avoid making chamfer sealing at the root end of the last installed *ELLE®*.



Step 3

If chamfer sealing is made it must be removed prior to *ELLE® Onshore* installation.

End

3.2 Marking of Application Area.

Step 1

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

Step 2

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

Step 3

Use the premanufactured template by centring 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.

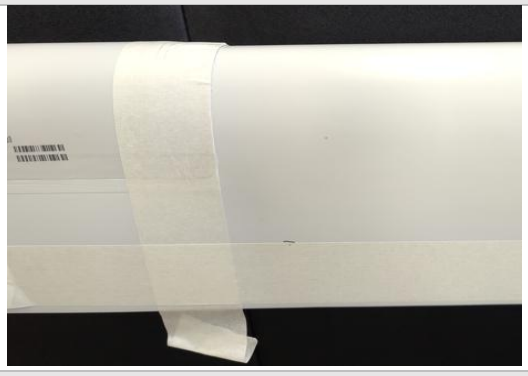
Step 4

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

Note:
Do not cover the marks.

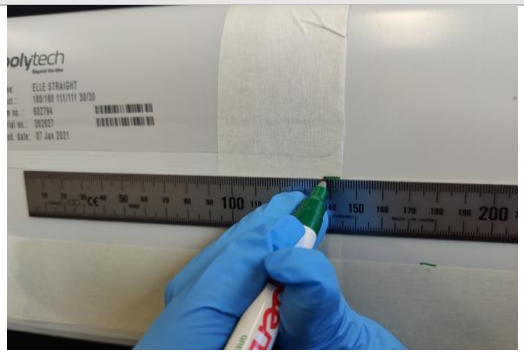
Step 5

Place a piece of 50 mm. masking tape across the blade, exactly along the end of *ELLE®*.



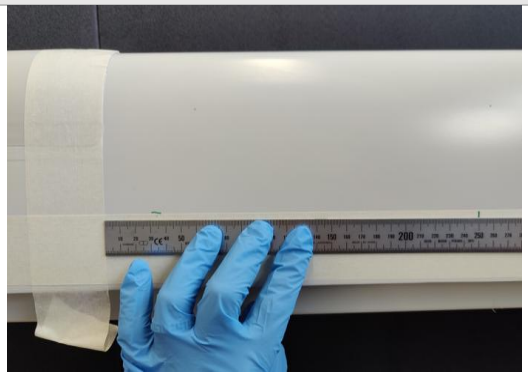
Step 6

Mark the width of the chamfer sealing on masking tape, on both SS and PS.



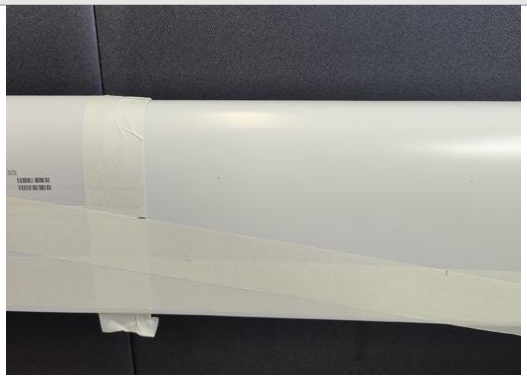
Step 7

Make a mark on the tape 250 mm. from the end of the preinstalled *ELLE®*, on both SS and PS.



Step 8

Place a piece of masking tape in a straight line between the 2 marks, on both SS and PS.



End

3.3 Preparation of Blade 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 the dust using a hand brush, air blower or vacuum cleaner starting from the top and moving downwards.
When the brushing/air 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.
When the wiping with IPA is finished, 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 promotor 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.

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

End

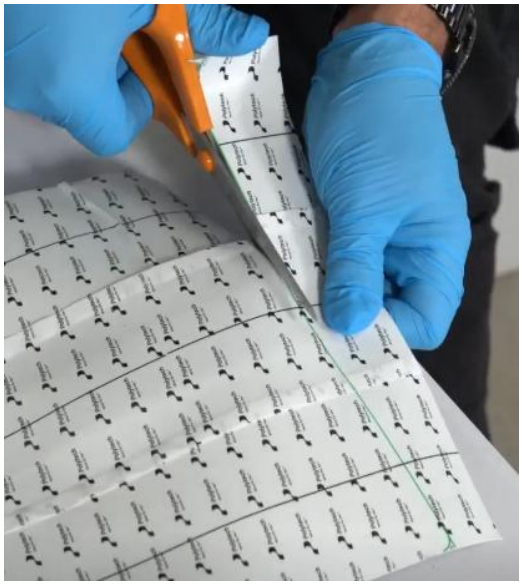
3.4 ELLE® Onshore installation on a vertical positioned blade

For installation on horizontal positioned blade please go to step 3.5

Before Starting

Make a clean 90° cut at the start of the *ELLE® Onshore* roll and cut a 10 mm. radius on all corners.

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 1

- Start the installation from the ROOT position.

Step 2

1 Spray blade surface with plenty of the application solutions.
2 Remove the centre liner from *ELLE® Onshore* without touching the pressure sensitive adhesive with bare hands.
3 Apply *ELLE® Onshore* in the centre of the masked application area, without covering any of the masking tape.

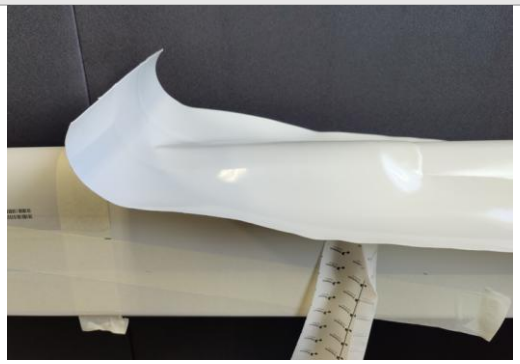
Note:
If struggling to position the *ELLE® Onshore* centred in the installation area, centre alignment marks can be made for each meter using the premanufactured template. Do **NOT** use black marker or pencil.

4 Use the application roller or the application scraper to fix *ELLE® Onshore* to the leading edge of the blade and remove all air and application solution entrapments at the same time.

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

Stop the installation no closer than 250 mm. from the preinstalled *ELLE®*.

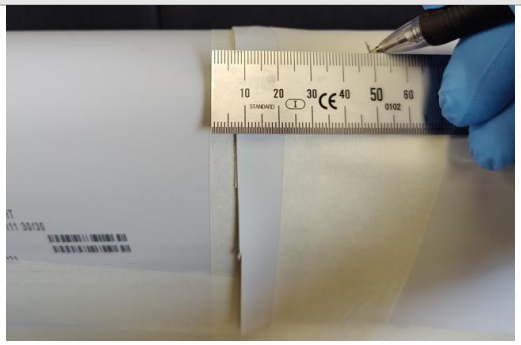


Step 4

Cut the *ELLE® Onshore* over the tape that goes across the *ELLE®*. After cutting it, hold it down to the surface applying a piece of masking tape across, close but not outside the end of the *ELLE® Onshore*.

Step 5

Measure 50 mm. from the edge of the tape on the *ELLE®* and make a mark with a fine tip pen on the tape on the *ELLE® Onshore*. Make as many marks as needed to be able to cut the *ELLE® Onshore* precisely.



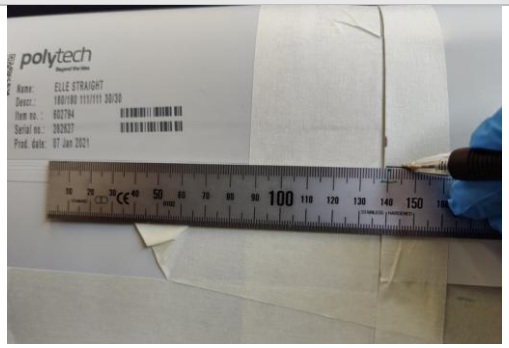
Step 6

Cut the *ELLE® Onshore* precisely along the marks.

Step 7

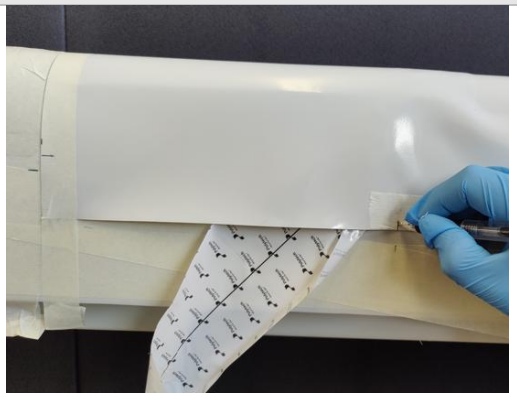
Hold the *ELLE® Onshore* down to the surface with the remaining tape. If it overlaps the *ELLE®*, it must be trimmed. Maximum gap between *ELLE®* and *ELLE® Onshore* is 2 mm. Then mark the edge of the *ELLE®* onto the masking tape, on both SS and PS.

NOTE. Make sure that it isn't the edge of the chamfer sealing being used for the marks.



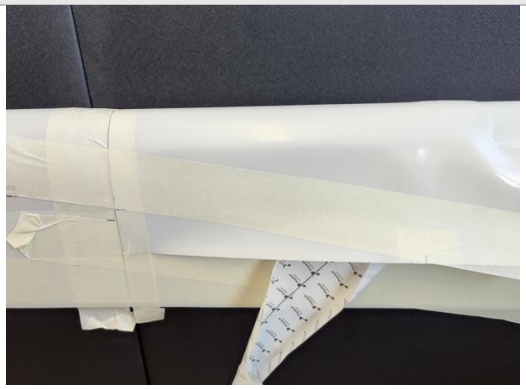
Step 8

Apply a piece of masking tape to the edge of *ELLE® Onshore* on both SS and PS and transfer the 250 mm. mark to them.



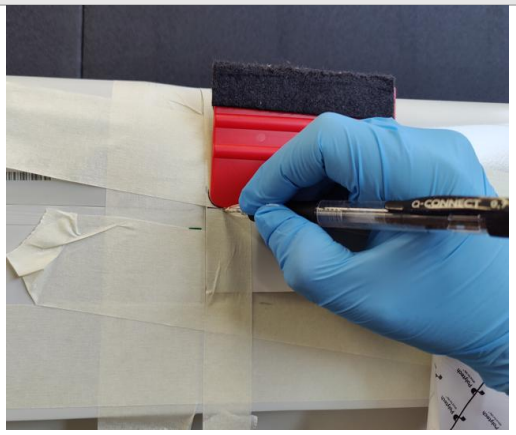
Step 9

Apply masking tape in a straight line between the marks on both SS and PS.



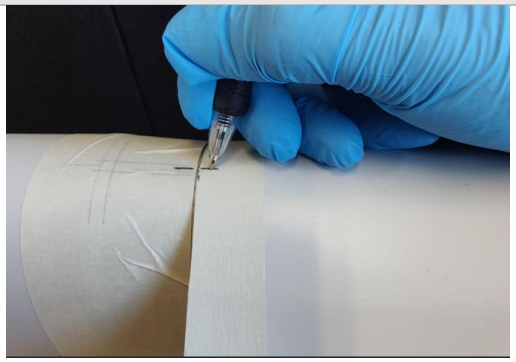
Step 10

Draw a 10 mm. radius on the masking tape in the corner towards the end of the *ELLE®* on both SS and PS.



Step 11

Make alignment marks in the centre of the leading edge on the tape on both *ELLE®* and *ELLE® Onshore*.



Step 12

Cut precisely along the edge of the masking tape and marked radius on both SS and PS and remove the masking tape.

Step 13

Remove the centre liner. Respect the alignment marks and finalize the application of the centre of *ELLE® Onshore*. Remove the masking tape at the end.

Step 14

1. Go back to the installation start position towards the root and apply both sides of the *ELLE® Onshore*.
2. Spray the blade surface with plenty of application solution.
3. Spray the outside area with plenty of the application solution to reduce friction when removing air entrapments.
4. Remove the side liner from *ELLE® Onshore* without touching the pressure sensitive adhesive with bare hands.
5. Remove the air and water entrapments using an application scraper, scraping from the centre of the leading edge to each side.

6 When no air and water entrapments are left, the masking tape can be removed.

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

Step 15

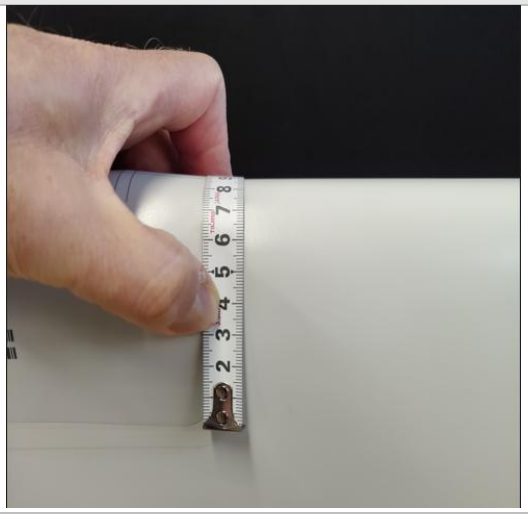
Go to step *3.7 Preparation of the overlapping piece* and continue.

End

3.5 ELLE® Onshore installation on a horizontal positioned blade

Step 1

Determine the width of the last installed *ELLE®*, by measuring it.

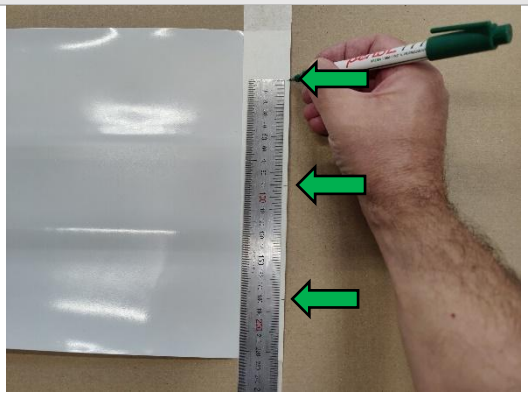


Step 2

Apply a piece of masking tape across the end of the *ELLE® Onshore* and make a clean 90° cut through the tape.

Step 3

Mark the centre of the *ELLE® Onshore and the desired width (determined in section 3.5 step 1) on the masking tape.*



Step 4

Put a piece of masking tape across *the ELLE® Onshore* centred at 250 mm. from the end.

Step 5

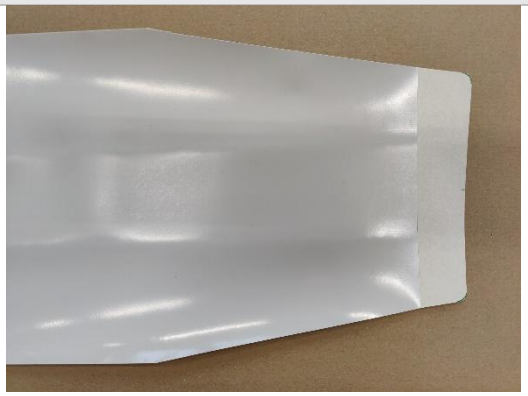
Make a straight clean cut between the width mark and the 250 mm. marks on both sides of the *ELLE® Onshore*.

Step 6

Draw a 10 mm. radius on the tape in each corner and cut along them.

Step 7

Remove the masking tape 250 mm. from the end but leave the masking tape with the centre mark at the end.

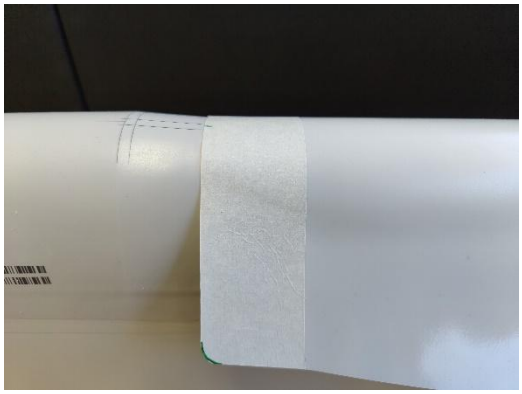


End

3.6 ELLE® Onshore installation

Step 1

Spray a mixture of 75% demineralized water and 25% isopropanol (Application solution) onto the blade surface. Peel back 5 cm. of the centre liner and place the *ELLE® Onshore* so that the alignment marks on the *ELLE®* and the centre mark on the tape at the *ELLE® Onshore* are aligned leaving a gap of no more than 2 mm. between them.



Step 2

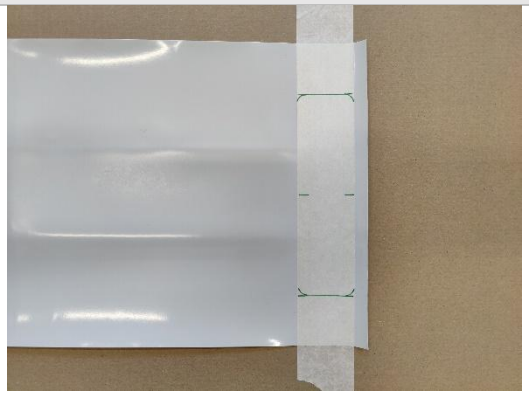
Remove the masking tape at the end of the *ELLE® Onshore* and finalise the installation according to*: LE-I058 Application of ELLE Onshore Factory*.

End

3.7 Preparation of the overlapping piece

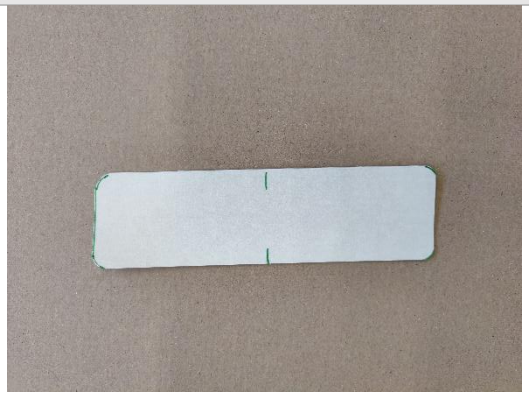
Step 1

Apply a piece of 50 mm masking tape straight across the *ELLE® Onshore* material.
Mark the desired width, determined in Section 3.2. *ELLE® Onshore* preparation, on the masking tape centred on the overlapping piece and draw a 10 mm radius in each corner.



Step 2

Cut along the edges of the masking tape and remove the masking tape.

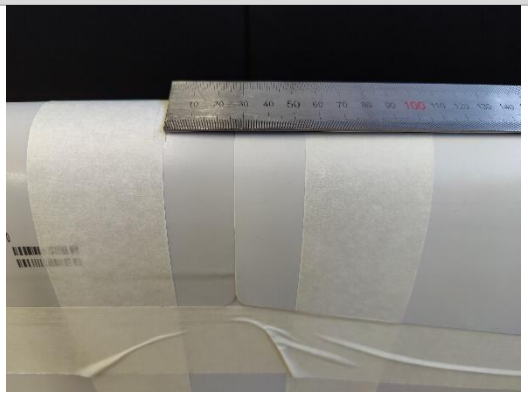


End

3.8 Overlap of connection.

Step 1

Apply a piece of masking tape across the *ELLE®* and across *ELLE® Onshore* 27 mm. +3/-0 mm. from the connection and mask lengthwise along the edge of *ELLE®* and *ELLE® Onshore* on both sides.



Step 2

Wipe the overlap area with *Sika® Aktivator-205* using a clean damp cloth.

Step 3

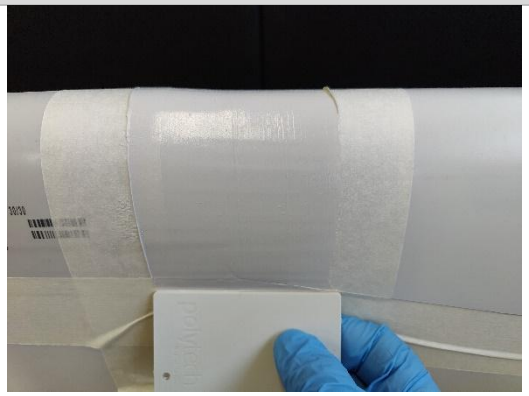
Wait between 10 and 120 minutes for the *Sika® Aktivator-205* to evaporate.

Step 4

Apply a line of *Centaur 960* into the gap between *ELLE®* and *ELLE® Onshore*.

Step 5

Smoothen out the *Centaur 960* to a thin layer at the overlapping area.

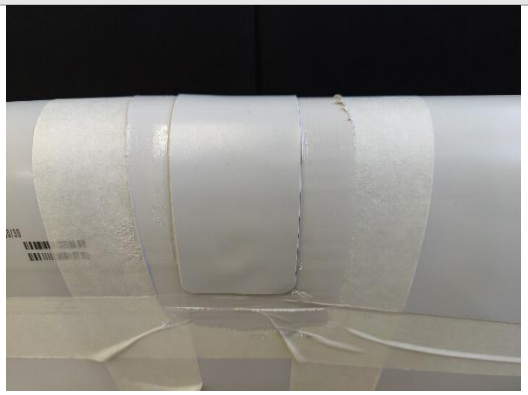


Step 6

Remove all the liner from the overlapping piece.

Step 7

Apply the overlapping piece centred in the overlapping area.

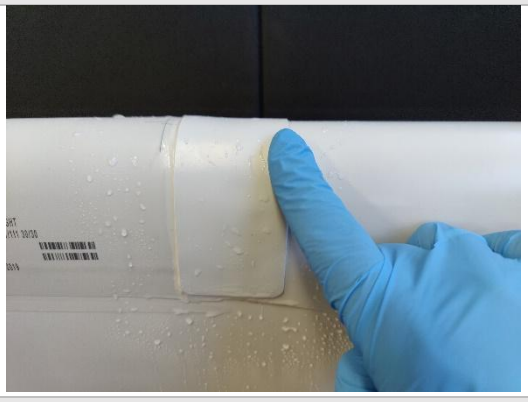


Step 8

Use application roller to remove any air entrapments.

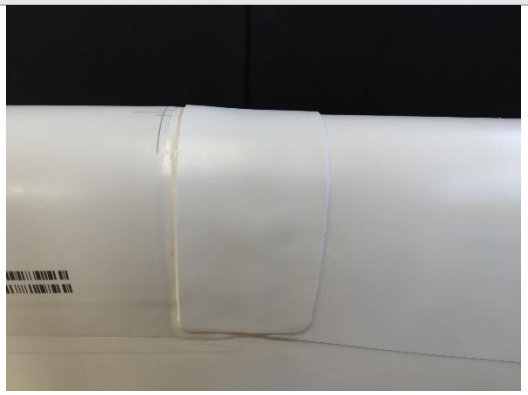
Step 9

Remove the masking tape and spray some application solution onto the overlap and smoothen the excess *Centaur 960* sealer with your finger.



Step 10

Wipe off any *Centaur 960* sealer on the overlapping piece with Isopropanol (minimum 95%) if needed.



End

3.9 Curing time

Before starting

The rotor can be released, and the WTG set to idle mode immediately after application of the replacement ELLE®. The sealed overlap patch must cure in accordance with the table below before the WTG can be put into operation.

Relative Humidity [%]	Temperature [°C]	Temperature [°F]	Minimum curing time [hours]
> 30	5 ... 10	41 to 50	12
> 30	10 ... 15	50 to 59	9
> 30	15 ... 20	59 to 68	7
> 30	20 ... 25	68 to 77	5
> 30	25 ... 30	77 to 86	4
> 30	30 ... 35	86 to 95	3
> 30	35 ... 40	95 to 104	2

End

4. 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.