PolyTech’s ELLE™ (Ever Lasting Leading Edge) is a market-leading product to protect blades from erosion caused by environmental factors like rain, sun etc. We have addressed the challenge of leading edge protection from a holistic point of view and developed a unique 360° solution - offering unmatched performance and taking into account all issues of functionality, ease of application, robustness etc.

Breaking new ground

Conventional leading edge protection solutions have proven insufficient to prevent erosion of leading edges during a blade’s life span.

Holistic development has lead to a new approach to leading edge protection - a robust polyurethane softshell with unmatched capabilities.

<table>
<thead>
<tr>
<th>ELLE™ PROFITABILITY ZONE</th>
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<tr>
<td>AEP as when sold</td>
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<td>AEP with ELLE™</td>
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<td>AEP with conventional LEP repair</td>
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SUMMARY OF ELLE ADVANTAGES

- Reducing COE
- Plug & play solution with pre-cut sections and minimum use of equipment
- ELLE™ is designed for up-tower installation using rope or basket
- Swift application process ensures minimum downtime
- Generic or blade-specific design will fit any blade variant
- ELLE™ can be applied in a wide weather window. 5°C to 35°C, 30-90% rH
- Insignificant modification of a blade’s geometry when fitted
- Application involves no HSE hazards
- Each ELLE™ section is fully traceable with engraved QR Code
Superior performance and durability
ELLE™ is applied to the leading edge using sturdy, thin bonding tape and seal.

Compared to conventional tape or paint based systems, ELLE™ can be applied in a wide weather window, and the swift application process reduces wind turbine downtime dramatically. Application time is approx. 15 minutes/meter.

The PolyTech concept outperforms conventional leading edge protection systems significantly in terms of durability and resistance to damage in harsh weather and environmental conditions.

Training
PolyTech offers competent training in the correct application of ELLE™ in dedicated in-factory facilities. Skilled technicians need training in materials and processes prior to certification for onsite installation.

Quality and traceability
ELLE™ is manufactured in a fully controlled production environment to ensure high, consistent quality and uncomplicated, expedient application to the leading edge. PolyTech conducts continuous inhouse process testing and produces comprehensive data using SCADA.

Each ELLE™ section is engraved with a QR code and a unique serial number, so that we can track every process from raw material batch to finished product.

Test results
ELLE™ is thoroughly lab-tested and has proven its performance in offshore installations since 2015:

- Rain erosion testing according to ASTM G73-10
  - Test specimens with overlap - 100 hours
  - Pre-damaged test specimens - 15 hours without additional damage
  - Aged in combination with Xenon + water spray according to ISO 4892-2 - 500 hours Xenon / 100 hours RE

- Tape and sealer adhesion according to ASTM 3338
  - Peel test on various substrates
  - Peel test after 7, 14 and 30 days of water submersion at 23°C

- Installed track record
  - Proven offshore installation since 2015 on turbines with tip speed above 95 m/s (test continuing)

The application of ELLE™ involves no chemical hazards and generates no hazardous waste. Image from PolyTech training facility.