AkzoNobel & Wind Energy Delft May 2022

AkzoNobel

Uwe Pinzer
Senior Global Sales Manager
Akzo Nobel Wind Power

Cell phone: +49 (0) 171 214 5781
Mail: uwe.pinzer@akzonobel.com

Product Life Time Prediction Material CYCLE MANAGEMENT (PLTP)

PLTP refers to the handling of a good as it moves through the typical stages of its product life: development and introduction, growth, maturity/stability, and decline. This handling involves both the manufacturing of the good and the marketing of it.

AkzoNobels approach to sustainable business: People. Planet. Paint.

AkzoNobel

People. Planet. Paint.
Our approach to sustainable business

People	Planet	Paint
How we treat our people, our suppliers and inspire and empower communities	How we minimize our environmental footprint	How we consistently innovate to supply sustainable, impactful solutions

The six chapters of our People. Planet. Paint. story

- People and communities — 17 PARTNERSHIPS FOR THE GOALS
- Reduced carbon and energy — 11 SUSTAINABLE CITIES AND COMMUNITIES; 13 CLIMATE ACTION
- Reduced, reused and recycled material use — 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- Health and well-being — 3 GOOD HEALTH AND WELL-BEING
- Less waste — 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- Longer-lasting performance — 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Proud of our pioneering carbon reduction target to help tackle climate change

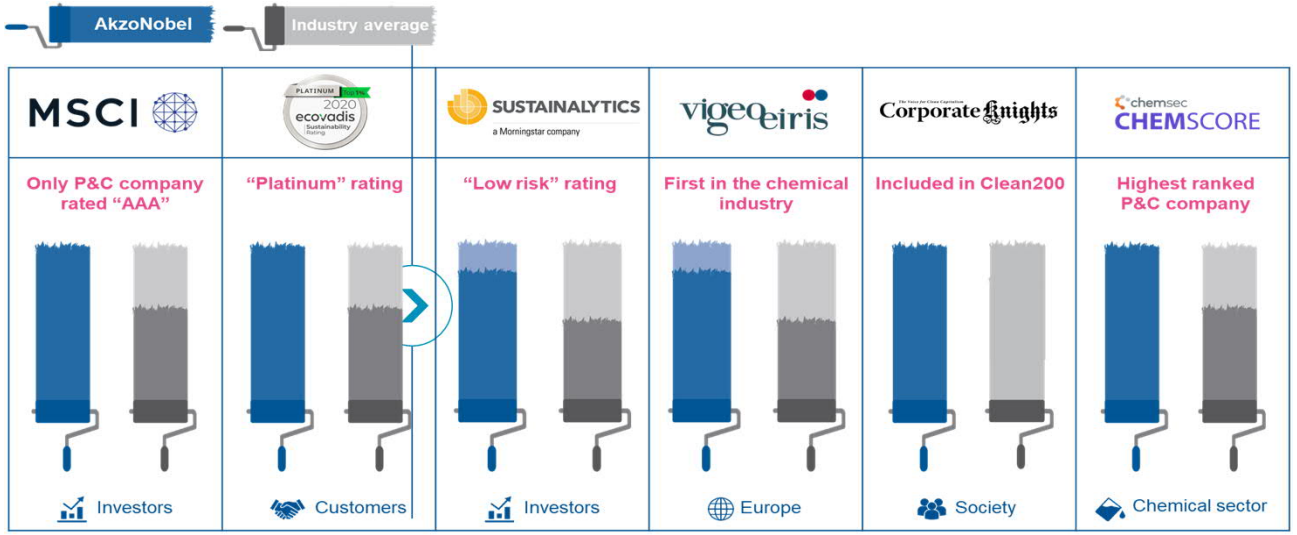
AkzoNobel

- First paints and coatings company announcing a carbon reduction target for the full value chain
- **Our target is to reduce carbon emissions for the whole value chain by 50% by 2030***
- Our target is aligned with the Paris agreement, aiming to limit global warming to max 1.5˚C above pre-industrial levels.

People. Planet. Paint.

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



*baseline 2018

Innovative Coating Solutions

Doing more with less

AkzoNobel

Steel Towers On-/Offshore
Efficient Technologies
- High-Solid Direct-to-Metal coatings
- 2 coat systems up to 25 years durability
- Coating engineering & services

Epoxy / PU Composite Wind Blades
Innovative Systems for the future
low Isocyanate and think green solution
- Relest® 2K PU Leight Weight Putty
- Relest® 2K PU Waterborne RET Topcoat / Finish
- Relest® 2K PU Anti Ice Topcoat / Finish
- Relest® 2K PU RET Protect 2K putty
- Relest® 2K Leading Edge Protection

Less waste solution

Foundations Offshore
Experience does matter
- Reduction of coating breakdown factor
- Customized project solutions
- 85 million m² protected by Interzone series

Drone solution
full system approach
- Steel tower on – off shore repair
- Blade LEP Repair
  on - off shore – film thickness control
- Inspection and other solution
- Track recording and life time prediction

Subsea solutions utilised to protect for monopiles, jackets, transition pieces, spar and semi-sub assets

Our systems are used to provide long life to first maintenance on assets in atmospheric conditions such as substations, towers and blades.

Glass Flake range available to lengthen service life performance > 25 years
- Interzone® 954GF
- Interzone® 1000

The Akzo Nobel technical process optimization will help to achieve a longer customer warranty.

Track Record of over 2,500 offshore wind foundations to date

AkzoNobel

First Offshore Wind application on the Beatrice Demonstrator project in 2006

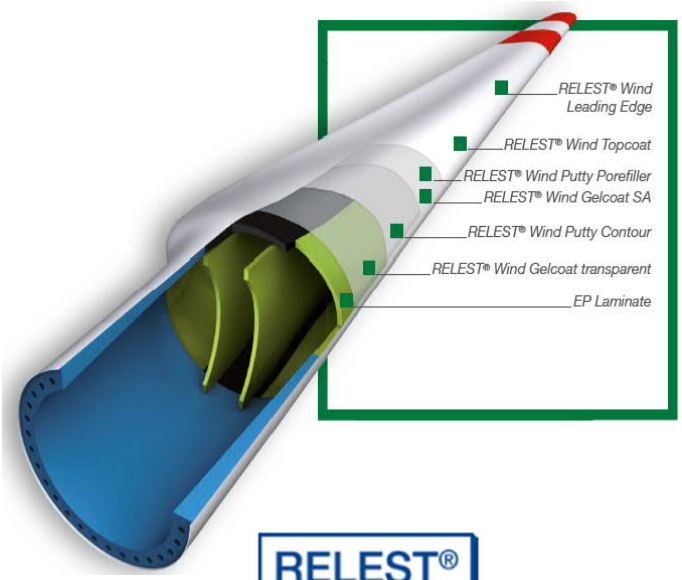
Our products are used to protect a number of floating offshore wind assets, including Fukishima and Hywind Scotland

Protecting Saint-Nazaire, the first commercial offshore wind farm installed in French waters.

Protecting the Worlds largest offshore wind farm – Hornsea

Wind Blade Products

AkzoNobel



RELEST®

AWLGRIP

International.

- Over 20 years experience in Wind Energy Coatings
- Relest Products since 2016 part of Akzo Nobel
- Under RD&I process
  new special WB RET performance Topcoat
  new LEP material (no cartridge necessary)
  Putty Protect, with longer RET stability (on - and off shore)
- Under application development
  Achieving a perfect LEP repair surface prior to LEP coating
  simple and easy material application process
  LEP spray application with film thickness control

New WB Topcoat

- **RELEST® Wind WB Topcoat LI**
  - We have introduced a new WB topcoat
  - RELEST® Wind WB Topcoat LI
  - Comparable performance to the current WB topcoat HB
  - **8:1 mixing ratio, saves consumption of hardener**
    - Improved HSE profile
      - Transport improvement of dangerous goods, warehouse
      - Sustainable solution – less isocyanate and more water
      - Water dilution possible, no additional thinner needed.
      - Easy clean with water- Less VOC emission!
      - Neutral smell
      - ~ -6% Hardener Volume needed!
  - **Fast Drying and fast Recoating Interval**
  - Comfortable potlife
  - **Roller application and good pinhole closing**
  - Good levelling / smooth surface
  - No mapping of putty areas
  - High opacity already with thin layers

CO_2 **Reduced carbon and energy**

Blade Repair System

AkzoNobel

Repair system for the Leading Edge on Rotorblades in the field

RELEST® Wind Blade Repair
Leading Edge Repair System

RELEST® WIND PUTTY CONTOUR Cartridge
RELEST® WIND POREFILLER Cartridge
RELEST® WIND Adhesion Promoter
RELEST® WIND LEP ETU Cartridge

RELEST® Wind Blade Repair
Topcoat Repair System

RELEST® WIND PUTTY CONTOUR Cartridge
RELEST® WIND POREFILLER Cartridge
RELEST® WIND HS Topcoat

Online Training
and
Work Instructions
Available!

	RELEST® Wind Putty Contour Cartridge	RELEST® Wind Porefiller Cartridge	RELEST® Wind Adhesion Promoter	RELEST® Wind LEP ETU Cartridge
Solid Content by volume	app. 98 %	app. 99 %	app. 26 %	app. 99,6 %
VOC	app. 68 g / l	app. 29 g / l	app. 648 g / l	app. 14 g / l
Application method	Metal filler knife	Metal filler knife, Roller, Brush	Roller, Brush	Roller, Brush
Mixing ratio	2 : 1	2 : 1	2 : 1	1 : 1

Material for the future under RD&I process

Material	Basic	Advance	Premium	foil concept	Remark
Putty Contour Cartridge	X	X	-	-	applicable by Drone
Putty Protect	-	-	X	X	applicable by Drone
Porefiller Cartridge	(X)	(X)	(X)	-	if necessary
Topcoat HS	2-3 X	-	(1 X)	-	applicable by Drone
Topcoat UHS	-	2-3 X	-	-	usable for OEM, off shore or as LEP solution
With Accelerator and special packaging					
LEP-ETU Cartridge	-	-	1-2 X	-	applicable by Drone
Roller, Brush, Spatula Application					
LEP- New	-	-	1-2 X	-	applicable by Drone
Edge Protect	-	-	-	X	applicable by Drone
Foil-System	-	-	-	X	

AkzoNobel


danke
thank you
gracias
merci
obrigado
teşekkür ederim
go raibh maith agat
bedankt
dziękuję
arigatô
sukriya
tapadh leat
kop khun krap
ngiyabonga
dakujem
mochchakkeram
hvala
dank je
terima kasih
謝謝
mauruuru
grazie
takk
taiku
спасибо
мерси
sagolun
merce
vinaka
trugarez
kam sah hamnida
didi madloba
diolch
sobodi
dhanyavadagalu
misaotra
chnorakaloutioun
grazzi
tanemirt
murakoze
mersi
dankon
kia ora
xièxie
mahalo
shukriya
gratias ago
ありがとう
obrigada
paldies
faafetai lava
dèkuji
akun
rahmet
rahmat
matondo
graçie
nandri
dankie
barka
kiitos
chokrane
enkosi
spas
gracies
tack
blagodaram
nanni
tau
bayarlalaa
najis luke
asante
manana
subay
dhanyavad
tenki
aciù
mannun
Баярлалаа
köszönöm