



# PMA<sup>®</sup> EcoGuard<sup>™</sup>

## Sustainability in Cable Protection



# Electrifying the world in a safe, smart and sustainable way

## Enabling a more sustainable and resource-efficient future

At ABB, we actively seek partnerships with our customers and suppliers to drive sustainable development.

As a technology leader in electrification and automation, ABB is at the core of accelerating the energy transition. Every day, we empower customers across the globe to optimize, electrify and decarbonize their operations.

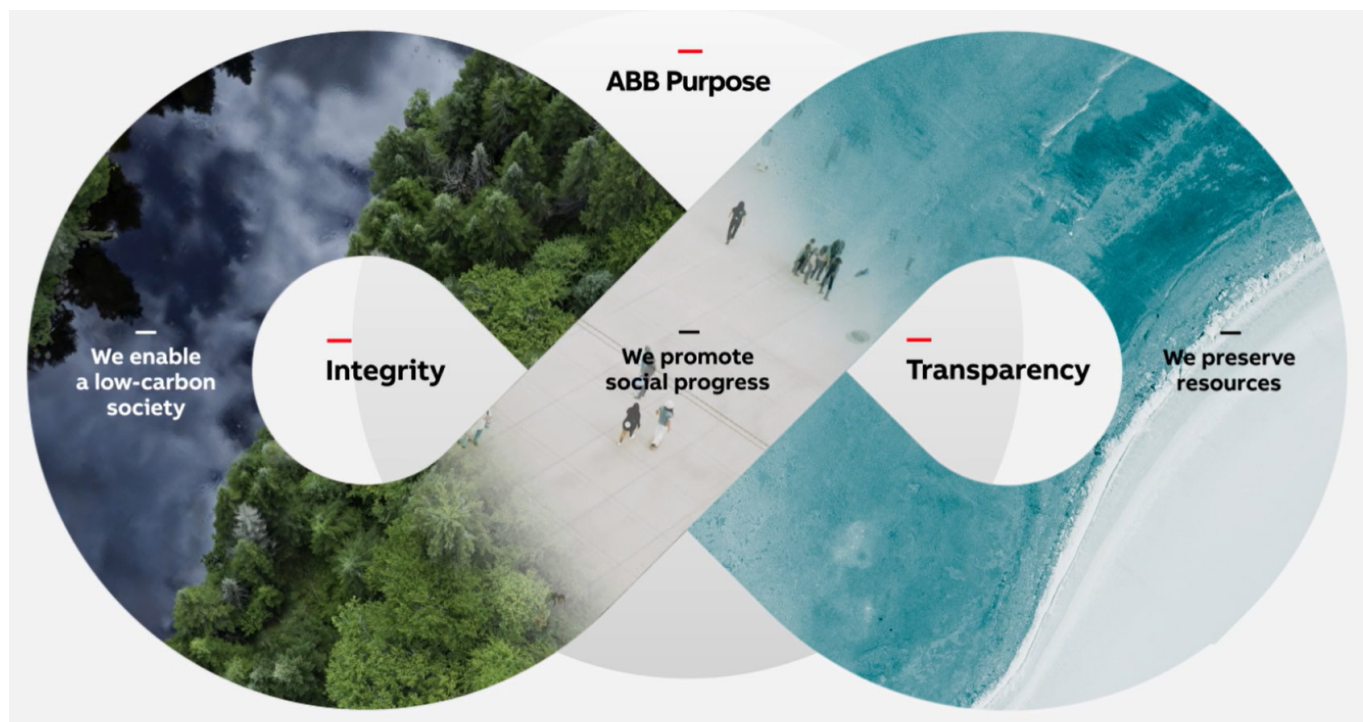
Our sustainability agenda is fully aligned with this mission and aligned with international standards and frameworks. Embedded across our business, it aims to enable a low-carbon society, preserve resources and promote social progress for a net-zero future.

To reduce environmental impact and preserve the Earth's resources for future generations, we help enable our customers and suppliers to become more circular and drive circularity within our own operations.

To support our customers' circularity journeys, our ABB EcoSolutions™ product portfolio provides full transparency on a product's circularity value and environmental impact.

ABB EcoSolutions provides full transparency to environmental impacts across the entire product lifecycle. Products within the portfolio comply with a set of key performance indicators defined in ABB's circularity framework and carry an external, Type III Environmental Product Declaration (ISO 14025).

ABB's circularity framework takes a lifecycle approach to preserve resources and factor out waste across our value chain. This includes design and sourcing, production and use, all the way to responsible end-of-life services.

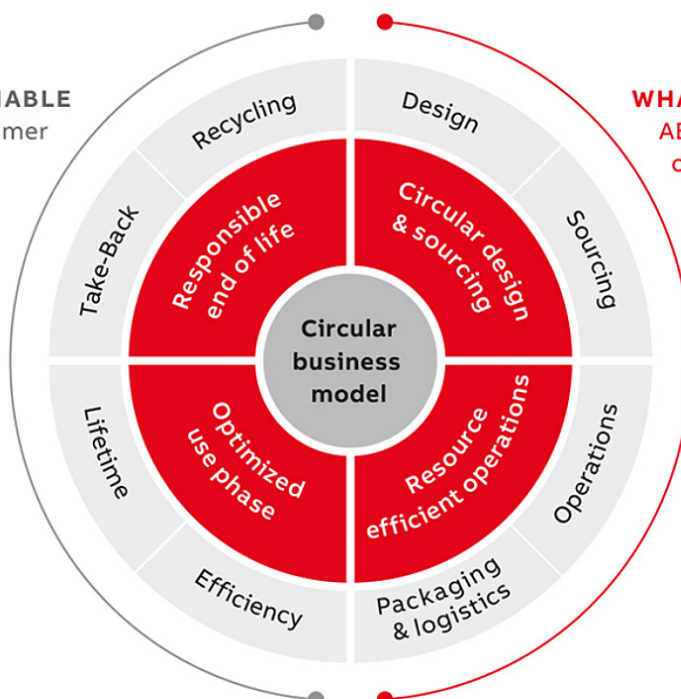






Sustainability: ABB's  
**circularity**  
framework is a  
lifecycle approach

**WHAT WE ENABLE**  
Circular customer  
solutions



**WHAT WE DO**  
ABB circular  
operations



ABB  
**Eco**  
Solutions™

# PMA® EcoGuard™ Cable Protection

## Our commitment to sustainable solutions for the industry

ABB's pioneering PMA products helps the industry to meet the new sustainability standards

The EU Green Deal aims to cut greenhouse gas emissions by at least 55% by 2030 and achieve net zero emissions by 2050, making it the first climate-neutral continent<sup>1</sup>. To support these goals, the EU has implemented various regulations and standards, including the EU taxonomy, EU green deal and Corporate Sustainability Reporting Directive (CSRD), among others. This commitment to sustainability is reflected by recent findings from "Future Industry Trends," revealing that 62% of industrial companies in the DACH region have set targets to achieve carbon neutrality within the next decade<sup>2</sup>. The importance of embracing sustainable

business practices is gaining momentum, particularly as material footprint reached 6.1 billion tonnes in 2020, indicating an unsustainable rate of material consumption exceeding the global average<sup>3</sup>. Measures like the Circular Economy Action plan and plastic tax highlight the importance of reusing materials and reducing waste to minimize the reliance on virgin raw materials. Several EU member states have implemented plastic taxes on single-use plastics and non-recycled plastic packaging waste at a uniform rate of EUR 0.8 per kg of plastic<sup>4</sup>. As the focus on reducing plastic intensifies, similar taxes or contributions, could extend to the actual products that are produced<sup>5</sup>.

# 30%

Savings in CO<sub>2</sub>e emissions<sup>6</sup>

# 50%

Reduction<sup>6</sup> in Use of Net Fresh Water



<sup>1</sup> [https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal\\_en](https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en)

<sup>2</sup> <https://en.staufen.ag/insights/studies-and-whitepapers/study-future-industry/>

<sup>3</sup> <https://www.eea.europa.eu/en/topics/in-depth/circular-economy?activeTab=fa515f0c-9ab0-493c-b4cd-58a32dfaae0a>

<sup>4</sup> <https://data.consilium.europa.eu/doc/document/ST-10025-2020-INIT/en/pdf> (page 10)

<sup>5</sup> [https://commission.europa.eu/strategy-and-policy/eu-budget/long-term-eu-budget/2021-2027/revenue/next-generation-eu-own-resources\\_en](https://commission.europa.eu/strategy-and-policy/eu-budget/long-term-eu-budget/2021-2027/revenue/next-generation-eu-own-resources_en)

<sup>6</sup> validated for conduit and in comparison to the use of conventional raw materials, based on third-party verified Lifecycle Assessment (Type III, externally verified)





PMA® EcoGuard™

is an example of

**commitment**

to sustainable solutions  
for the industry



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# PMA® EcoGuard™ PA6 cable protection is anything but ordinary.

## Developed in collaboration with Envalior

Envalior, our strategic partner and a leading global engineering materials solution provider, has a 100-year track record of customer-centered innovation, focusing its deep material and application expertise on sustainable high-performance products.

PMA® EcoGuard™ PA6 cable protection boasts a remarkable feature – it is partially crafted from abandoned nylon fishing nets. This new product family not only helps to address this pressing global concern but also contributes to a substantial reduction in upstream Scope 3 greenhouse gas emissions by 30% and a 50% decrease in water consumption compared to conventional, fossil feedstock-based alternatives. According to a study published in March 2018 in Scientific Reports, approximately 46% of the 79 thousand tons of ocean plastic in the Great Pacific Garbage Patch is made up of fishing nets, some as large as football fields.\*

With approximately 640,000 tons of ghost fishing nets (equivalent to 50,000 double-decker busses) continuing to plague our oceans annually, PMA

EcoGuard™ PA6 is helping reuse what would otherwise be garbage in the ocean.

## **Envalior**

*Imagine the Future*

For the development of PMA EcoGuard™ PA6, we collaboratively combined our technology with the deep materials expertise of Envalior, to create a solution that meaningfully contributes to our sustainability strategy 2030: enabling a low-carbon society as well as working with our customers and suppliers to implement sustainable practices across our value chain and the lifecycle of our products and solutions.

Biggest single source of plastic choking sea turtles and other marine species is made up of purposefully or accidentally lost, discarded, or abandoned fishing nets, ropes, and plastic fishing crates and baskets. Approximately 46% of the 79 thousand tons of ocean plastic in the Great Pacific Garbage Patch is made up of fishing nets, some as large as football fields<sup>1</sup>.

<sup>1</sup> <https://www.nature.com/articles/s41598-018-22939-w>  
[nature.com/articles/s41598-018-22939-w](https://www.nature.com/articles/s41598-018-22939-w)







Made from abandoned nylon  
**fishing nets**  
 contributing to a reduction of  
 ocean pollution



From superior impact strength and high heat resistance to excellent flame retardancy, the PMA® EcoGuard™ raw material from Envalior delivers properties that help us produce lighter and smarter products.

# PMA® EcoGuard™ PA6 Portfolio

## A part of our full line of cable protection systems

PMA® EcoGuard™ PA6 products are employed for maximum protection of cable connections under rigorous conditions.

Made from 50% recycled polyamide, the PMA® EcoGuard™ PA6 Portfolio is an ideal cable protection solution for the machine building industry, installation and applications in wind parks, solar installations and telecommunication solutions.

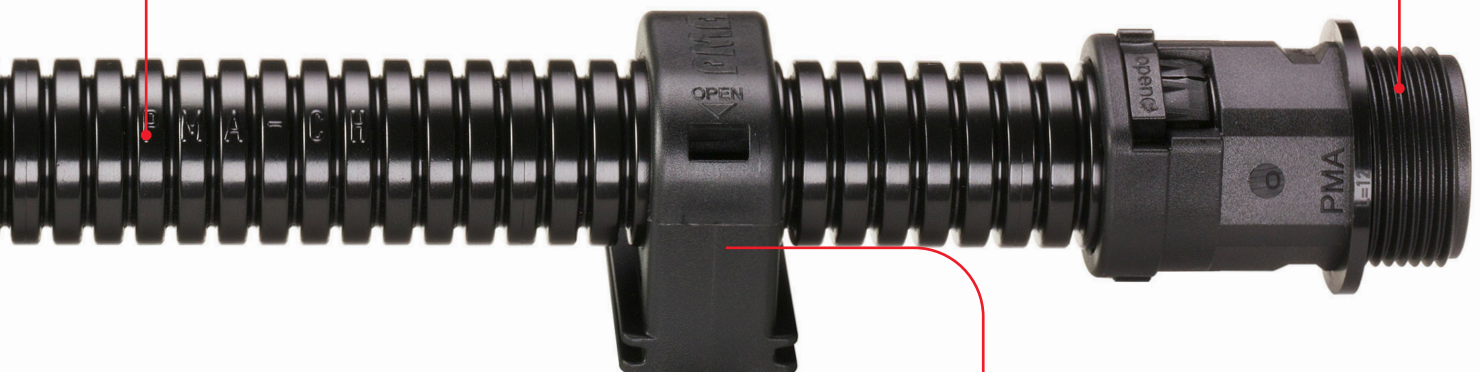
The RPPA conduit is ABB EcoSolutions™ certified and comes with 30% savings in CO<sub>2</sub>e emissions and 50% reduction in net use of fresh water.\*

### Key features of PMA® EcoGuard™

- 50% recycle-based polyamide 6 sourced primarily from discarded fishing nets
- High-grade, specially formulated polyamide 6
- Manufactured with newest injection moulding and extrusion technology
- Fulfills highest international quality and standard requirements
- Intelligent safety locking mechanism
- Allows simple “push-in” installation of conduits
- Due to the integrated conduit supports the conduit remains centralised with little deformation even when bent sharply directly at the fitting

**Unique blend of recycle-based and high grade, specially formulated polyamide 6 Conduit with very good mechanical performance and flexibility**

**Fitting with easy “push-in” installation and IP 66 protection**



**One-piece system support with very high impact resistance**

\* Relative to the use of conventional raw materials, based on third-party verified Lifecycle Assessment (Type III, externally verified)



## PMA® EcoGuard™

### General technical details



ABB  
**Eco**  
Solutions™



### RPPA Conduit

- Made from 50% recycle based polyamide 6
- Very good flexibility
- Temperature range  $-40^{\circ}\text{C}$  ...  $+105^{\circ}\text{C}$  continuous,  $+160^{\circ}\text{C}$  short-term
- Good UV resistance and weathering characteristics
- Free from halogens and cadmium
- RoHS and REACH compliant
- ABB EcoSolutions™ certified

### BFH-RP System support

- Made from 50% recycle based polyamide 6
- One-piece construction
- Very high impact resistance
- Optimal axial strain relief due to integrated rib
- Suitable for overhead installations due to safety lid
- High retention forces
- Quick mounting due to single hole fixing
- Very good chemical properties

### BRND-Fitting

- Made from 50% recycle based polyamide 6
- Easy "push-in" installation
- Re-opening with screwdriver (for security reasons hand opening not possible)
- Compact design saves space
- Fits both conduit profiles: fine (T) and coarse (G)

The PMA® EcoGuard™ conduit provides very good flexibility, a perfect solution for applications where space is limited



Smartphone  
for detailed  
product  
information.



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# PMA® EcoGuard™ PA6 applications

## A solid footing in mechanical engineering

Typical applications where you can use PMA® EcoGuard™ PA6 are machine building solutions, and applications in wind parks, solar installations and telecommunication solutions

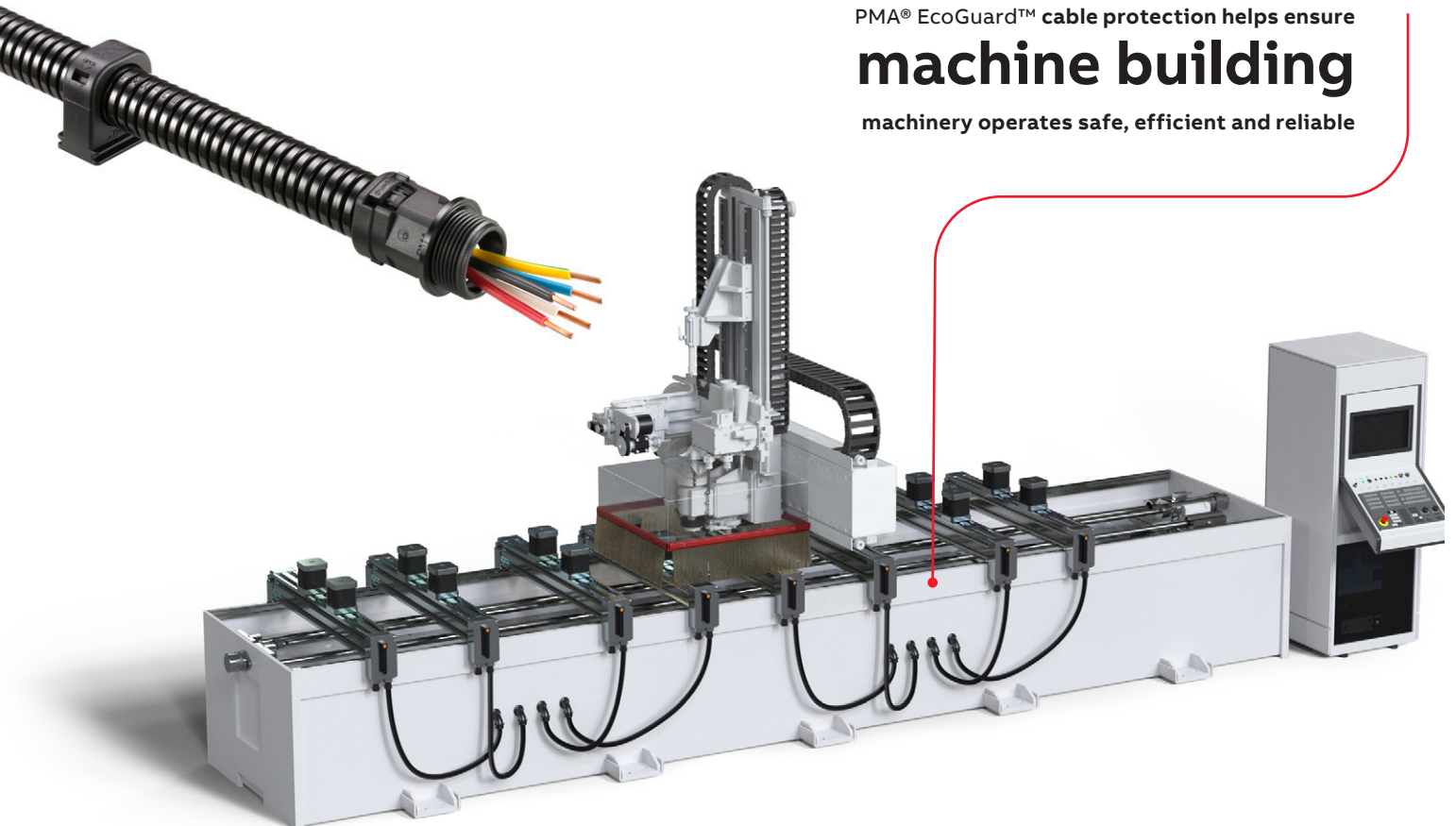
Safeguarding people and machinery is essential for the industry. A considerable number of PMA cable protection systems are used in mechanical engineering applications. The PMA® EcoGuard™ sustainable products are the perfect solution to help the industry to reduce greenhouse gas emissions and minimize their environmental footprint.

You can use PMA® EcoGuard™ PA6 cable protection products in machine tools, packaging machines, printing machines as well as heating, ventilation, conveyer and filling systems.

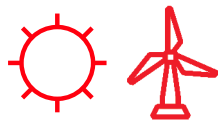
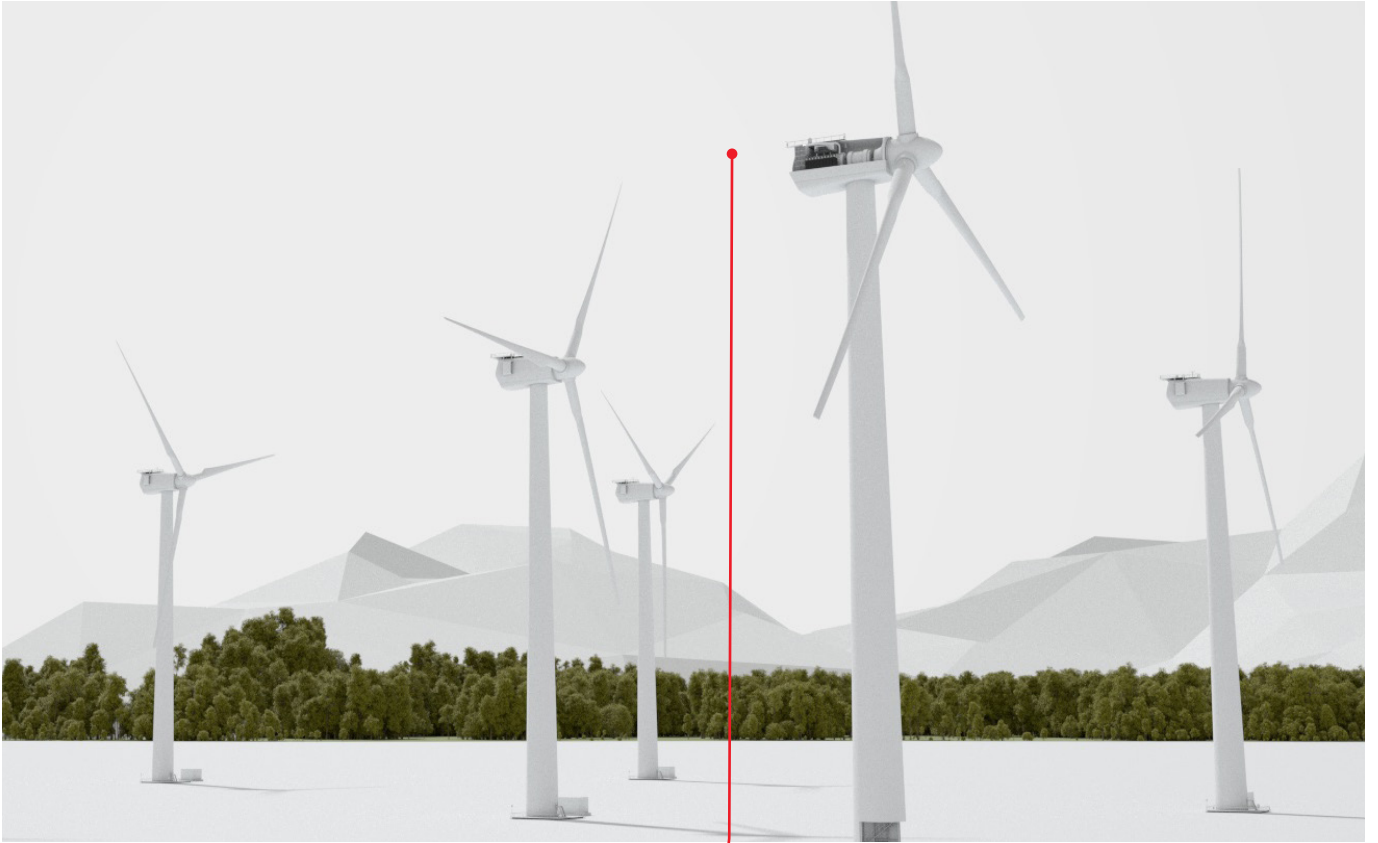
PMA EcoGuard™ can make a vital contribution to the smooth operation of high voltage and emergency power systems, production machinery and woodworking machines, etc. PMA EcoGuard™ safeguards cables, wires and data links against heat, cold, compression and tensile stresses, and other external influences in industries such as the machine building, sustainable energy, in datacenters and telecommunications solutions.



PMA® EcoGuard™ cable protection helps ensure  
**machine building**  
machinery operates safe, efficient and reliable



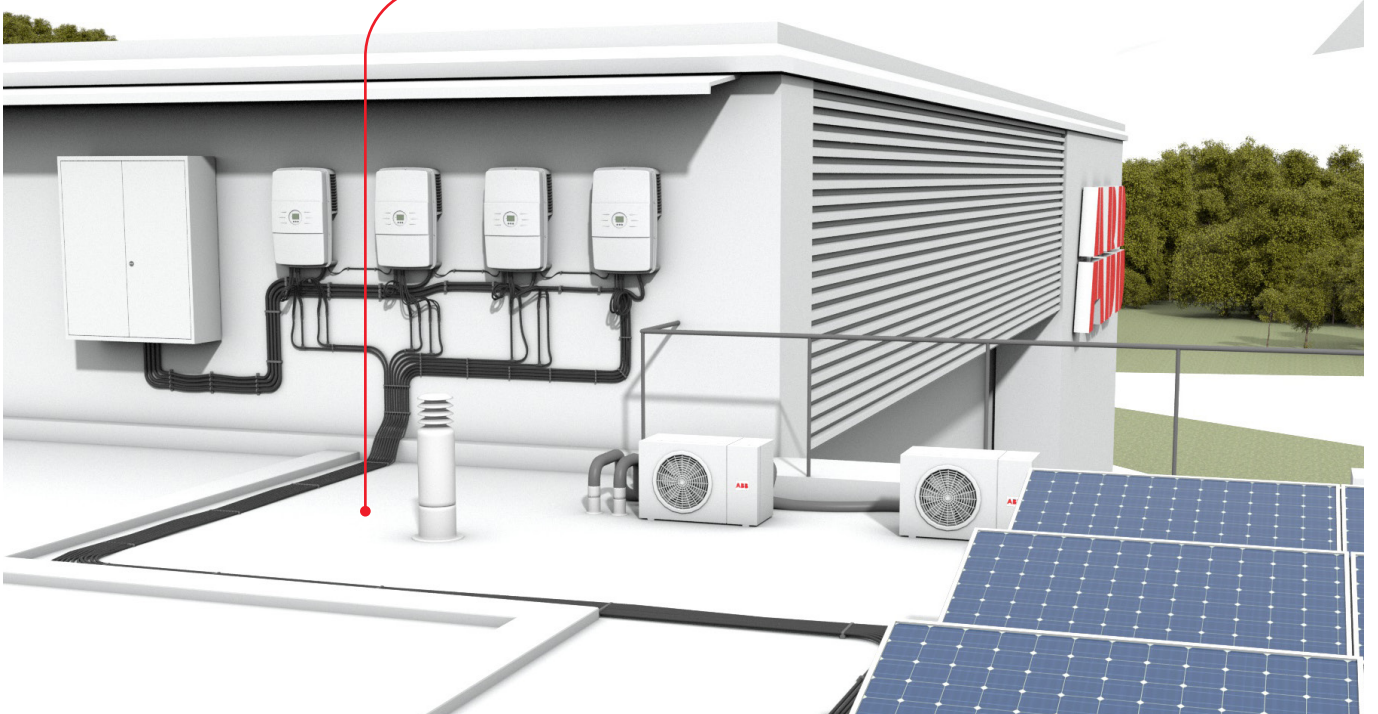




PMA® EcoGuard™ can be used in

## **sustainable energy**

solutions like wind turbines and solar applications



# PMA® cable protection solutions from ABB

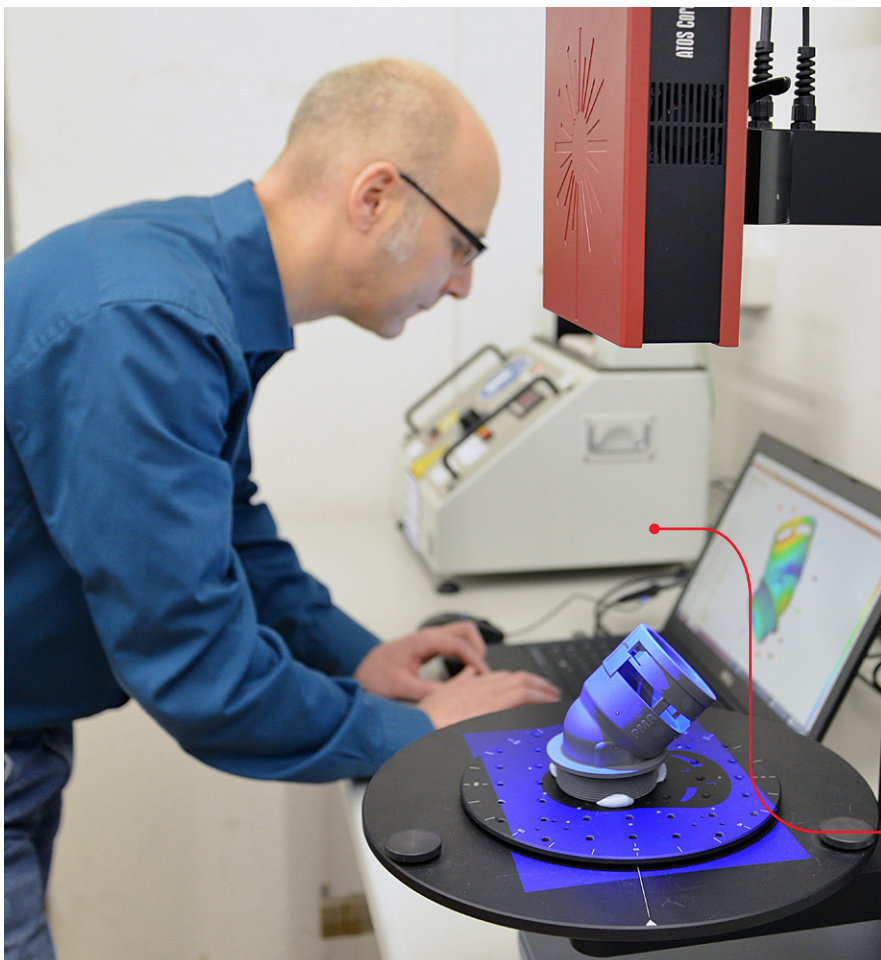
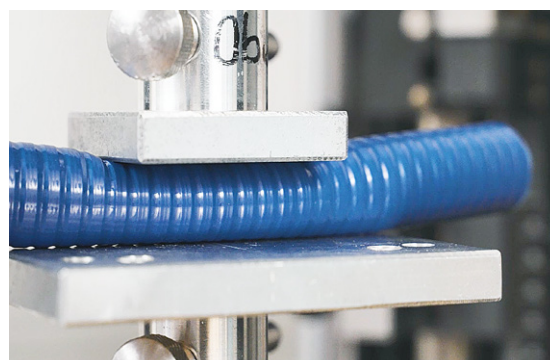
## From pioneer to a market leader

For almost five decades, PMA® offers many types of conduits and fittings with different technical characteristics to serve the diverse requirements of various industry applications.

Intensive testing, research and development activity is a top priority for PMA products every day. That's why PMA is a leader in the field of cable protection. Our more than 45 years experience in the design and production of cable protection systems offers optimal solutions for use in an extremely wide range of industrial applications. The level of protection we offer to cables is constantly increasing. Extensive testing is therefore critical for research and development of new cable protection products as well as in quality control. Our products are tested to both international standards and internal test procedures. Our rigorous testing process helps ensure your products align

with all applicable requirements and expectations to the extremes of cold to the extremes of heat and humidity. In addition to standard production, the PMA team can build fittings and conduits to meet individual requirements as a special service to our customers.

Research and development activity is a top priority and why PMA is a market leader in the field of cable protection.



### Unique benefits of PMA products from ABB

- A safe, reliable system that is easy to install
- High system connection strength
- High conduit retention force and resistance to vibration
- Water and dust tight to IP68 and IP69
- Ingress protection conforming to recognised test methods
- Intensive product quality testing over specified periods

Worldwide meeting

**standards**  
of the industry





# Sustainability at ABB's PMA manufacturing site

## Enabling a more sustainable and resource-efficient future

Together with our customers and partners, ABB is innovating to make more sustainable solutions and operations a reality. ABB's EcoSolutions™ provides full transparency to environmental impacts across the entire product lifecycle

As a global technology leader in cable protection, ABB is at the core of helping accelerate the energy transition. Every day, we empower customers across the globe to optimize, electrify and decarbonize their operations. ABB's sustainability agenda is fully in line with this mission.

### Installation of PV panels on our PMA production side

On average, these panels produce an impressive 50-60 megawatt-hours (MWh) of electricity each year. That's equivalent to powering over 4 homes for an entire year! Our PV panels are seamlessly integrated into the grid and contribute to the local energy supply, supporting a cleaner grid. Since 2011, our solar panels have saved 313 tons of CO2 equivalent emissions.

PMA Uster facility  
solar panels have saved

**313 tons**  
of CO2 equivalent emissions







A passion for a  
cleaner environment }

{ To protect our  
marine life

PMA® EcoGuard™ Cable Protection support our commitment to more sustainable solutions for the industry. ABB's pioneering, eco-friendly PMA products, help the industry meet new sustainability standards. [www.pma.ch](http://www.pma.ch)





## Further information

Visit our website to learn more about PMA® EcoGuard™

Visit the PMA® EcoGuard™ web page on **pma.ch** for our most up-to-date product portfolio, and much more. Here you will find all of the planning documents you need at your fingertips, including:

- Technical data sheets
- General technical details
- CAD files
- Brochures
- Application recommendations
- White paper
- Latest news and updates
- Videos



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