

APPLICATION BROCHURE

Installation Products

Extreme temperature protection



Installation Products Division

- Wire and cable management
- Cable protection systems
- Boxes and fittings
- Connectivity and grounding
- Medium voltage

Thomas & Betts is now part of ABB's Installation Products Division, but our long legacy of quality products and innovation remains the same. From connectors that support wire buildings on Earth to cable ties that help put machines in space, we continue to work every day to make, market, design and sell products that provide a smarter, safer and more reliable flow of electricity, from source to socket.

Table of contents

004–005	Extreme temperatures may be the norm in your world
006–007	Designed to perform
008–009	Extreme temperature protection
010	Installation Products for applications
011	Installation Products for industries

Excessive heat or cold can wreak havoc on an electrical system, potentially causing critical components to fail.



Extreme temperatures may be the norm in your world

Electrical components usually operate under a relatively limited range of temperature variations.

However, certain applications – including pulp and paper mills, oil and gas drilling, power generation and distribution and chemical processing – experience temperature extremes where electrical connections and components must operate without degradation.

With most electrical systems and components built to perform within a certain temperature range, exposure to extreme temperatures can greatly affect the operational efficiency of these systems. When exposed to extreme cold, components can become brittle and crack, hindering the electrical system's ability to function and operate at the

proper level. Extreme heat, on the other hand, can cause components to soften and fail – or even melt and potentially destroy nearby equipment.

Process heat from the components themselves can raise the operating temperature, and when exposed to external sources of heat, can compound the impact on the system. Along with these problems, repeated thermal expansion and contraction can cause damage to conduit and wiring, as well as create condensation, which occurs with rapid temperature change.

ABB products are designed to take the heat

Whether you are operating a paper mill at over 200° C or drilling for oil under arctic conditions, you need electrical systems and components that will function – consistently and reliably. ABB provides electrical systems and components designed to perform in the harshest conditions. Knowing that commercial and industrial electrical systems are temperature dependent, ABB has created electrical components that work outside of standard temperature ranges to make them effective in both the extreme cold and heat.

Our product offering ranges from PMA® Extreme-Temperature Flexible Nylon Conduit to T&B® Fittings ATX Liquidtight Flexible Conduit, designed with extreme temperature and condensation protection in mind. Thomas & Betts products help protect electrical systems from failures that occur when exposed to extreme cold or heat, allowing you to run your operations no matter what the operational environment.



Designed to perform

Installation Products business line

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Wire and cable management

- Industry's broadest range of innovative solutions for bundling, securing and routing wire and cable
- Designed to perform in the most demanding conditions
- Overview in fastening, bundling and managing wires
- For electrical installers, panel builders, OEM professionals and many more

Connectivity and grounding

- Covering IEC/EN, NFC, UL and NFPA projects
- Reliable and high quality manufactured components
- Low installed costs through intelligent design
- Design services support and technical advice
- Protecting people, assets and electrical equipment

Boxes and fittings

- Highest quality, most versatile, innovative range of boxes, fittings and enclosures
- Comprehensive line of boxes – metallic/non-metallic, indoor/outdoor, weatherproof and floor
- Fast and flexible enclosure solutions
- Specified in the industrial, construction and utility markets

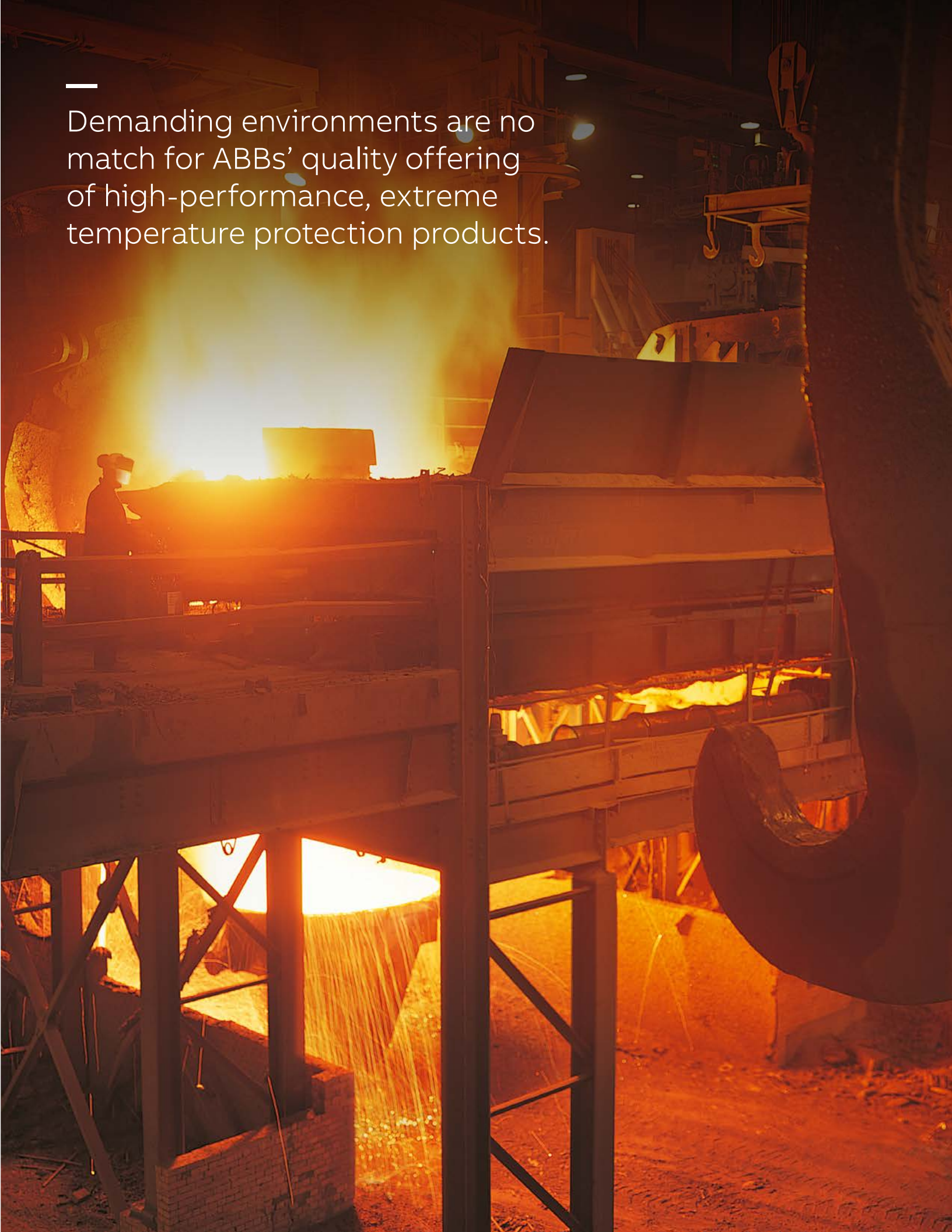
Cable protection systems

- Unsurpassed protection for wire and cables in the most demanding applications
- Customized specific solutions – through innovation & material science expertise
- Conform all international certifications – such as IRIS and end user approvals
- Comprehensive support service – worldwide close to the customer
- Over 12.000 high performance products – for outdoor & indoor, static & dynamic

Medium voltage

- Intelligent control and reliable connection of electrical power
- Reducing maintenance, repair and operational costs in the field – overhead or underground
- Solid dielectric switchgear, solid dielectric reclosers, capacitor switches and controllers, air break switches, electric arc furnace switches, current-limiting fuses, fault current indicators, underground cable accessories, overhead connectors, underground and network connectors, substation connectors, and street lighting connectors
- Specified Industrial, construction and utility markets

Demanding environments are no match for ABBs' quality offering of high-performance, extreme temperature protection products.



Extreme temperature protection

Ty-Rap®

Ty-Rap® Cable ties

- Designed for tying, lashing and identification applications in demanding environments such as food processing, boiler rooms, chemical plants, refineries, pulp/paper mills, shipyards and offshore oil platforms
- Corrosion resistant, providing a safe, strong, worry-free hold
- Type 304 stainless steel ties are completely fireproof – no toxic fumes and no sagging cables
- Easy to apply and superior quality
- Coated versions are available
- For use in temperatures from -40° to 150°C
- Feature “The Grip of Steel®” stainless steel locking device and offer infinite adjustability

T&B® Fittings

T&B® Fittings

High-temperature solutions

- For use in temperatures from -60° to 150°C
- HT System solution for LT fittings, Liquidtight flexible metallic conduits and seal gaskets

T&B® Fittings

Liquidtight connectors & metal conduit



- 52° Series High-temperature Liquidtight connectors are suitable for environments up to 150°C
- Ideal for industrial MRO and OEM applications in food and beverage, pharmaceutical, petrochemical, wastewater, salt water and other corrosive environments
- Fitting type 304 stainless steel body and gland nut resist corrosion far better than other metallic fittings
- Stronger and more UV resistant than non-metallic fittings
- ATX Flexible metal conduit is designed to perform in extreme temperature environments
- The sealing ring and throat insulator of the fitting is molded from high-temperature nylon
- Fittings available in steel and 304 stainless steel
- Available in straight, 45° and 90° configurations

T&B® Fittings

XD Expansion fitting



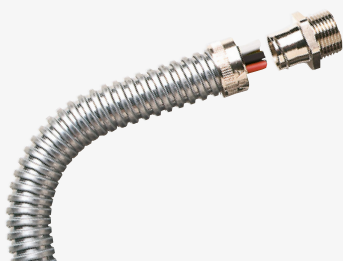
- Ideal for use in rigid conduit runs subject to movement due to external forces or temperature changes
- Suitable for use indoors, outdoors, direct buried or embedded in concrete
- Accommodates axial expansion/contraction, parallel deflection and angular misalignment



Adaptaflex

Extreme temperature conduit

- Adaptaflex Extreme-temperature conduit gets the job done in the most demanding environments



- Liquidtight extreme-temperature covered steel flexible conduit also available
- Greater temperature tolerances
- High compression/crush strength
- Tensile strength – pull off load under tension
- Impact resistance
- Inherent fire protection on uncoated versions
- Corrosion-resistant, stainless steel options
- Braided – high-level EMI screening with tinned copper overbraided
- Not UL® Listed

Extreme temperature protection



PMA

PMA®

Flexible nylon conduit systems

- PMA® has nylon conduit systems specifically designed for extreme-temperature environments
- More than 20 different conduit types for a variety of applications in cable protection
- Conduit for technically demanding applications and special requirements
- Conduit sizes range from 6mm to 125mm diameters, from lightweight to heavyweight, and pliable to highly flexible
- Standard colors are black and gray
- Many conduits are specially approved, e.g. CSA, UL® Recognition, NF, SNCF, DB, etc.

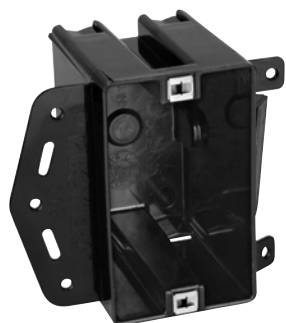


Carlon®

Carlon®

Polycarbonate electrical boxes

- Carlon® Non-metallic boxes feature a rugged polycarbonate construction to withstand extreme temperatures
- Won't deform in hot environments or become brittle in cold environments
- Listed to UL514C
- Listed for masonry walls
- UL® Classified for two-hour fire wall and/or fire ceiling
- Meet NEMA OS-2
- Permissible for use with 90°C conductors
- UL® File E11461 and R9140



Sta-Kon®

Sta-Kon®

High-temperature wire joints and terminals



- Rated for temperatures up to 150°C, 600V maximum
- Molded, one-piece nylon construction for electrical insulation, rated UL94V-2

KOPEX-Ex

Kopex-Ex

High-temperature conduit systems



- The Kopex-Ex High-temperature conduit system is designed for extreme temperature environments
- Flame dies in less than 30 seconds after ignition source is removed
- Chemical and oil resistant
- IEC 61386 approval

Installation Products for applications

01 Continuous operation and sustainability.

02 Corrosion and harsh environment protection.

03 Safety and contamination.

04 Emergency electrical solutions.

05 Total project cost reduction.

06 Liquid ingress protection.

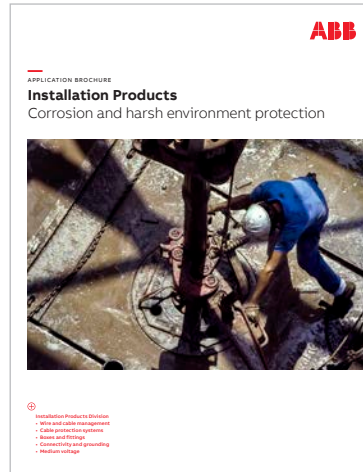
07 Extreme temperature protection.

08 Grounding and bonding.

09 SKU Reduction.



01



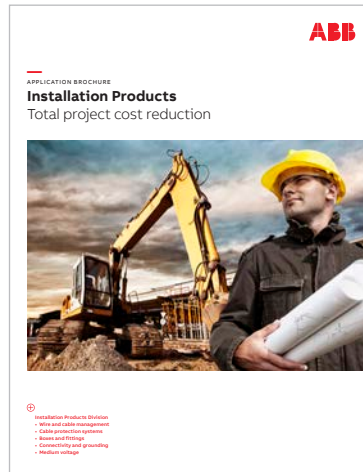
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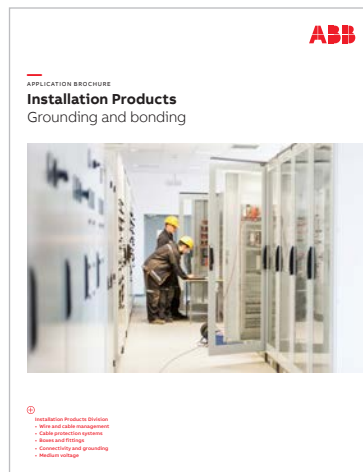
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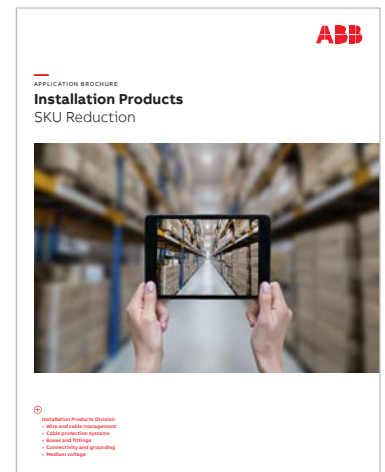
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Installation Products for industries

01 Commercial and institutional buildings.

02 Data centers.

03 Food and beverage industry.

04 Food and beverage industry - plant assessment.

05 Utility industry.

06 Power generation industry.

07 Chemical industry.

08 Oil and gas industry.

09 Wind power industry.

10 Renewable energy industry.

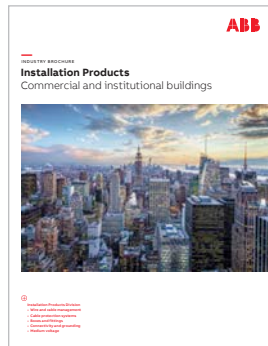
11 Water and wastewater treatment industry.

12 Single and multi-family housing industry.

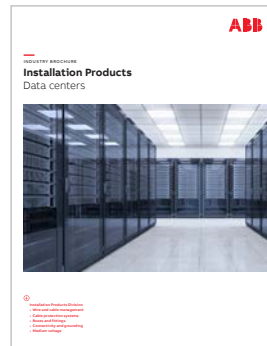
13 Rail industry.

14 Civil infrastructure industry.

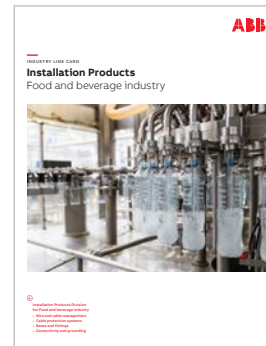
15 Metals and mining industry.



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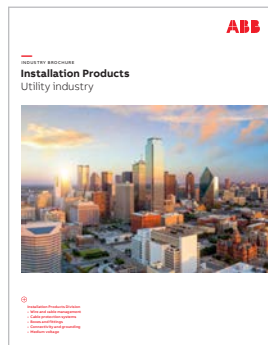
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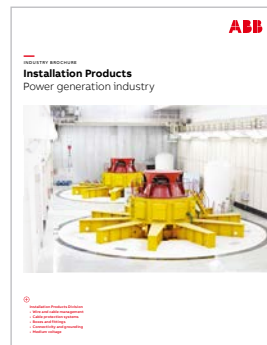
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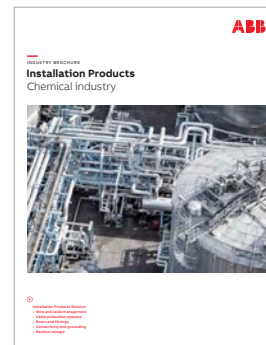
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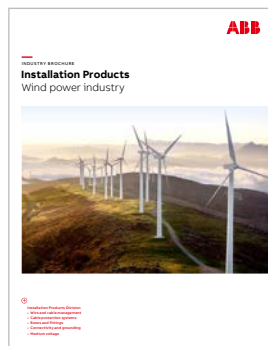
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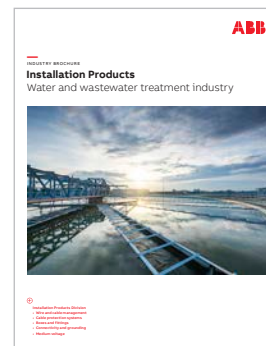
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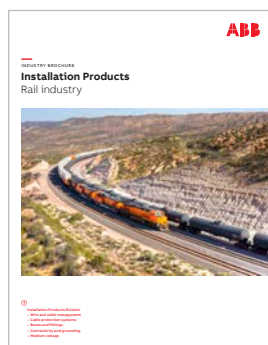
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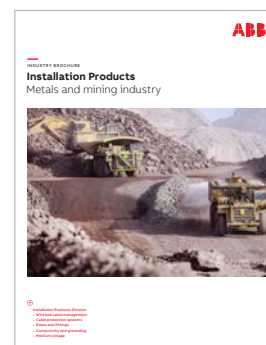
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US

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