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.
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Designed to perform
Civil infrastructure industry

ABB understands the challenges faced in the civil infrastructure industry and is committed to providing innovative electrical solutions that not only reduce overall project costs, but also increase safety, promote sustainability and even improve cash flow.
Whether it’s labor-saving rough-in components, custom-designed electrical prefabrication systems, online cloud-based design tools or even our world-class logistics, ABB can help bring civil infrastructure projects in on time, within budget and profitably.
## Product selection guide
for the civil infrastructure industry

### Product selection guide

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Challenge and commitment

Those responsible for maintenance of our nation’s infrastructure include government agencies, transportation administration officials, civil engineers and contractors.

Among the challenges they face are:
- Reduced budgets
- Lower gasoline taxes dedicated to infrastructure revenue
- Government’s commitment to maintaining infrastructure and current funding
- Strict regulatory restrictions on expansions

Transportation systems and public utilities are essential for the economic vitality of our businesses and communities, the conservation of fuel and other natural resources and the comfort and safety of residents and visitors.

On the most basic level, every community requires access to clean water and sanitary waste disposal. At a higher level, mass transit infrastructure is needed to move people and goods from one area to another. At a higher level, mass transit infrastructure is needed to move people and goods from one area to another.

The highway system is a key component to civil defense. If the infrastructure is poorly constructed and maintained, it could lead to a devastating loss of life, property and business.

Today’s project management emphasizes the Total Cost Concept, which factors in maintenance, replacement and downtime cost. In a critical transportation environment, the impact of maintenance and downtime costs is even higher.

ABB realizes the importance of the Total Cost Concept and ensures well-engineered laborsaving products through critical tests at every stage of manufacturing. Our goal is to be the brand of choice for the end user of our products. We are committed to developing more solutions for civil infrastructure, staying current with the latest available technology and remaining competitive.

ABB provides electrical solutions that help you:
- Keep operations running
- Optimize operation and maintenance costs
- Maintain a safe environment
- Operate within budget

These solutions enable infrastructure professionals to save money, ensure transportation safety and keep America moving.

Civil Infrastructure applications

- Highway
- Rail
- Marine
- Aviation

*Source: Washington Post*
During the 1950s & 60s, America spent 3-4% of its national GDP on infrastructure. Today, America spends less than 2.5% of GDP on infrastructure. In order to bring our existing infrastructure up to “good condition,” the country needs to spend approximately $2.2 trillion on infrastructure repairs and upgrades.
Continuous operation is the fundamental goal of all civil infrastructure. ABB products help make sure that traffic keeps moving, planes and trains run on time and ports provide safe harbor.
Continuous operation & sustainability

Highways, rail and marine transportation sectors must contend with vibration and movement. ABB offers several solutions to help systems maintain service levels.

This includes T&B® Fittings for expansion and expansion/deflection, Carlon® PVC expansion fittings and Ocal® PVC-coated conduits, fittings and accessories. These items are used on bridges and roadways to provide movement and flexibility at seams and transition points. In addition, our Kindorf® and Superstrut® brands of framing are used in seismic bracing designs.

Airports require a constant power supply to service radar and communications. Cyberex® UPS systems ensure the continued operation of critical air traffic control. Our Amerace® brand is the world leader in the design and manufacture of isolating transformers, connector kits and cable assemblies for airfield lighting.

Blackburn® – Motor lead disconnects
- Quick, reliable change-out of electric motors with no bolting, taping or loose connections
- Complete line of motor lead disconnects for 600V and 5kV applications, covering wire ranges from #16 through 4/0 AWG
- Featuring the Color-Keyed® Compression System that ensures proper connections

Elastimold® – Cable accessories
- A full line of loadbreak and deadbreak separable connectors, cable joints and cable terminations
- Developed for 5 to 35kV distribution systems

T&B® Fittings – Type A liquidtight flexible non-metallic conduit with non-metallic or stainless steel fittings
- Ideal for continuous flexing or vibration applications
- Create a liquid-, dust- and oil-tight seal
- Suitable for operating temperatures from -20°C to 60°C

Russellstoll® – DuraGard® pin-and-sleeve connectors
- Not just watertight, but waterproof, mated or unmated
- Tested to 1000 psi for washdown applications
- Full line of 20–60A (600VAC/250VDC max.) connectors, plugs and receptacles in UL94V-0 flammability-rated, corrosion-resistant, non-metallic housings

Sta-Kon® – DuraGard® pin-and-sleeve connectors
- Corrosion-resistant, nickel-plated wire terminals, high-temperature wire joints and terminals
- Heat-shrink terminals, ergonomic Comfort Crimp® tools and disconnect installation tool
Corrosive & harsh environment protection

Highways, rail and marine transportation sectors all require protection from corrosion and harsh environments. ABB offers several solutions to help systems maintain service levels.

Note that some parts of the country use PVC conduit while other parts use rigid. The requirements vary by jurisdiction, and regulations usually pertain to dealing with weather demands.

Corrosion is exceptionally severe near coastal waters, and electrical systems are especially challenged. ABB offers several solutions to help you in these areas. Parts manufactured from corrosion-resistant materials range from PVC to stainless steel.

**T&B® Fittings – Stainless steel liquidtight conduit systems**
- Type 316 stainless steel construction for LT fittings, conduits and seal gaskets
- Rated for temperatures up to 105°C

**Ocal**
- PVC-coated conduit, fittings, Ocal-Blue® NEMA Type 4X Form B conduit bodies.

**Ty-Rap® – Stainless steel cable ties**
- Strong, fireproof and easy to apply – for safe cable bundling
- Resist corrosion and UV light, with the ability to withstand temperature extremes
- Provide a strong, safe installation with a uniquedual-locking mechanism

Adaptaflex®
- Cable protection systems – Conduit and connectors

Carlon®
- PVC fittings, expansion fittings, Snap-Loc® spacers and P&C® flex conduit

Homac®
- Copper Flood-Seal® compression splice kits

Kindorf®
- 316 Stainless, aluminum, PVC-coated or non-metallic channel, hangers and clamps

Kopex-Ex™
- Explosion-proof raceway and conduit systems

PMA®
- Nylon cable protection systems

Red-Dot®
- Code Keeper® weatherproof while-in-use covers

Sta-Kon®
- Corrosion-resistant, nickel-plated wire terminals
- Heat-shrink terminals, ergonomic Comfort Crimp® tools and disconnect installation tool
Civil infrastructure components must be worth their salt to stand up to salt and other corrosive agents. ABB conduit, fittings and cable ties provide reliable operation in corrosive and harsh environments.
An electrical system includes various pieces of conductive equipment connected together to keep them at the same potential. ABB manufactures a variety of solutions to meet the installation rules of the National Electrical Code®.
Grounding & bonding

Grounds from a battery, engine, switch-panel negative bus bar, bonding system, auxiliary power generator, underwater ground plate, a ship’s 120V safety ground and LORAN signal ground all meet at one point. This point must be a heavy bus bar or bracket with bolted connections.

ABB Grounding & bonding products meet exothermic, compression and mechanical requirements.
A ground is a critical part of an electrical system. In some extreme cases, redundant grounds are used to ensure services and operations are not disrupted and that equipment and personnel safety are not put at risk.

Blackburn®
• E-Z-Ground® Compression connectors,
  - High-conductivity copper and bronze enable connections for direct burial, OEM or telecomm applications
  - Featuring the Color-Keyed® compression system that ensures proper connections
• Mechanical grounding connectors,
  - High-strength split-bolt connectors for copper-to-copper connections
  - Service post connectors for steel structures, fence posts or transformers using one or two cables
  - ViceLock® connectors for cable tray, channel and strut applications

Blackburn® – High-quality flexible connectors
• A wide variety of grounding straps and accessories for grounding applications
• Extra-flexible links for heavy-duty applications up to 3600A
• Standard flexible links for medium-duty applications up to 2350A

ABB Grounding & bonding products meet exothermic, compression and mechanical requirements.

T&B® Fittings – Grounding fittings
• Steel and aluminum construction
• Trade sizes through 1” include Revolver® ground ring
• Straight, 45° angle and 90° elbow versions available

Elastimold®
• High-voltage separable connectors and solid-dielectric switchgear

EZCODE®
• Danger/warning labels and signs, industrial markers, barricade/burial tapes and wire markers

Fisher Pierce®
• Faulted circuit indicators

Homac®
• Copper Flood-Seal® compression splice kits

Kopex-Ex™
• Explosion-proof raceway and conduit systems

Russellstoll®
• DuraGard® and MaxGard® connectors, explosion-proof receptacles and GSUL ground indicator system

*NEC® and the National Electric Code® are registered trademarks of the National Fire Protection Association, Inc.
Liquid ingress protection

The smallest amount of liquid ingress can start the corrosion process and destroy vital connections for civil infrastructure operations, causing outages, delays and closures.

ABB product solutions are recommended for use in outdoor or indoor locations where applications are exposed to continuous or intermittent moisture.

T&B® Fittings – Stainless steel liquidtight conduit and cord fittings
- Stainless steel 316 construction resists corrosion
- Rounded gland nut deflects water from connector
- Continuous sealing ring ensures a liquidtight seal

Homac® – Flood-Seal® multi-port connectors
- All connectors are 100% Hi-Pot Tested at 4000V for 60 seconds
- Flood-Seal® insulating rockets serve as waterproof spare outlet caps until used
- Dual-rated for copper and aluminum

Russellstoll® – DuraGard® pin-and-sleeve connectors
- Not just watertight, but waterproof, mated or unmated
- Tested to 1000 psi for washdown applications
- Full line of 20–60A (600VAC/250VDC max.) connectors, plugs and receptacles in UL94V-0 flammability-rated, corrosion-resistant, non-metallic housings

Red-Dot® – Code Keeper® weatherproof covers
- Rugged aluminum construction resists corrosion
- Cover wet location receptacles to ensure personnel safety

Adaptaflex®
- Cable protection systems – Conduit and connectors

Carlon®
- PVC fittings, expansion fittings, Snap-Loc® spacers and P&C® flex conduit

Kopex-Ex™
- Explosion-proof raceway and conduit systems

Ocal®
- PVC-coated conduit, fittings, OCAL-BLUE® NEMA type 4X form 8 conduit bodies

PMA®
- Nylon cable protection systems

Sta-Kon®
- Heat-shrink terminals, ergonomic Comfort Crimp® tools and disconnect installation tool
- Shrink-Kon® wire and connector insulation products
Liquids are invasive anddestructivetoyour infrastructure’selectrical systems. Count on ABB waterproof solutions that prevent liquid ingress from harming both equipment and personnel.
Electricity has long been recognized as a serious workplace hazard, making safety a critical necessity. Electrical safety can help you prevent shock, arc flash, fires and explosions. And since electricity is used everywhere, electrical safety needs to be everywhere, too – especially on the job site.
The proper function of signs, lights, switches and signals enables safe operating conditions. ABB Safety solutions bring reliability to your project and meet all required codes and standards.

**Railway infrastructure**
ABB offers many products that provide fault-free operation of signaling and control systems, providing dependability for use with couplings, trucks, and gangways as well as with roof and under-floor equipment. Our products contribute to the safe operation of freight trains, high-speed passenger trains, commuter trains, trams and subways – above or below ground.

**Marine infrastructure**
In marine applications, cables and cable bundles are subjected to high stress. Vibration increases the risk of overheating, abrasion damage and electrical short circuits. Cable routing around machinery also requires absolute protection, and it is essential that cables can easily integrate into prefabricated elements like cabins. Many shipping companies rely on the dependability of our products, and ABB products protect the assets of large and small shipping vessels as well as ports.

**EZCODE™ – Safety labels, tags, signs and barricade tapes**
- Help to ensure personnel and workplace safety, as well as regulatory compliance
- Highly visible and long-lasting materials

**Adaptaflex®**
- Cable protection systems – Conduit and connectors

**Russellstoll®**
- GSUL Safe ground indicator system
  - Prevents operation of pumps without a safe ground for static dissipation
  - Indicator lights display the establishment of a safe ground
- Safety interlocks
  - 30A and 50A ranges and polarizations to 480VAC
  - Flame rated and DuraV® housing

**Amerace®**
- Isolating transformers, connector kits and cable assemblies

**Blackburn®**
- E-Z-Ground® compression connectors, mechanical grounding and exothermic grounding systems
- Compression lugs and splices, KUBE® power connectors and motor lead disconnects
- Ergonomic compression tools

**Fisher Pierce®**
- Faulted circuit indicators

**Ty-Rap® – Fluoropolymer cable ties**
- UL® 94V-0 flammability rating
- For use in temperatures ranging from -50°F to 284°F

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**Russellstoll®**
- DuraGard® and MaxGard® connectors, explosion-proof receptacles and GSUL ground indicator system.

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**Fisher Pierce®**
- Faulted circuit indicators

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**Ty-Rap®**
- UL® 94V-0 flammability rating
- For use in temperatures ranging from -50°F to 284°F
Total project cost reduction

In today’s challenging economic environment, projects that were recently considered “a go” are now getting a second look and closer scrutiny. Everyone’s goal is to improve total project economics and help make marginal projects viable.

At ABB, our engineers design products that are simpler to use. For example, the new LU® conduit body has enabled installers to reduce wire pulling time by up to 35%. When using products such as the Kindorf® Trapnut® fastener and Cobra® cable and pipe clamp, the overall benefit in a project is installed savings.

Kindorf®
- **Trapnut® strut fastener**
  - Features either a stainless steel, Galv-Krom® or SilverGalv® finish
  - Corrosion resistant
  - Saves on replacement and labor costs
- **Cobra® one-piece cable and pipe clamp**
  - Installs quickly and securely
  - Attaches to equal trade sizes of EMT and rigid conduit
  - Greatly reduces installation time

Steel City® – Metallic boxes, covers and accessories
- Custom-designed assemblies of components can save over 50% on your in-wall rough-in installation costs
- Special ARRA and Buy American assemblies reduce overall material costs by up to 40%
- Project-specific packaging, labeling and just-in-time direct deliveries the day needed cut material-handling and inventory costs
- Pre-assembled, palletized components reduce onsite packaging and waste
- Steel City® Prefabricator lets you design, manage, quote and order your own in-wall rough-in electrical systems specific for your project

T&B® Fittings – BlueKote® LU® universal conduit elbow
- Provides a 4-to-1 SKU reduction for conduit body applications
- Reduces installation time and risk of installer strain
- Angled cover port – easier wire pulling and uses standard covers
- BlueKote® four-layer protection provides internal and external corrosion resistance
- Rated for 40% wire fill

Carlon®
- PVC fittings, expansion fittings, Snap-Loc® spacers and P&C® flex conduit

Red-Dot®
- Code Keeper® weatherproof while-in-use covers
ABB understands the needs of civil infrastructure, which is why we deliver complete solutions that help reduce costs at every stage of operation and maintenance.
Gases and vapors always pose a concern in garages, hangers and other areas classified as hazardous locations. Our explosion-proof solutions can prevent or contain an explosion in those locations.
Hazardous location protection

Civil infrastructure has inherent hazardous locations, such as service garages, airport hangers and fueling docks. The National Electrical Code® (NEC®) defines hazardous locations as areas where the possibility of explosion and fire is created by the presence of flammable gases, vapors, dust, fibers or flyings.

To protect both your facility and your employees, ABB has several solutions to use in hazardous locations that meet the electrical codes and standards.

**T&B® Fittings**
- GUP Explosion-proof enclosure
  - Compact design is ideal for fuel pumps
  - Constructed of ductile iron for superior strength
  - Dust-ignition-proof, raintight and listed for wet locations
- XP Explosion-proof flexible couplings
  - Explosion proof and corrosion resistant for use in hazardous and wet locations
  - Ideal for making tight bends in conduit systems or for applications subject to movement or vibration

**Russellstoll® – MaxGard® Explosion-proof interlocked receptacles**
- Copper-free, cast-aluminum, epoxy-coated housing
- O-ring-sealed interior components ensure watertight protection whether connections are mated or unmated
- Explosion-proof systems for 30A, 60A and 100A

**EZCODE®**
- Danger/warning labels and signs, industrial markers, barricade/burial tapes and wire markers

**Kopex-Ex™**
- Explosion-proof raceway and conduit systems

**Reznor®**
- Heaters
Power quality, efficiency & reliability

Power quality and reliability issues are keys to the successful delivery of energy. Power blackouts and brownouts can have serious economic consequences. Poor power quality, for example, affects computers and other sensitive equipment. What’s more, keeping security systems operational is also essential with the escalating threat of terrorism.

When the reliable connection and intelligent control of electrical power are necessities, our wide product selection maintains and improves power quality, efficiency and reliability. From 120V to 230kV, our solutions are specified worldwide in the industrial, construction and utility markets.

Joslyn® – VerSaVac™ vacuum switch
- Completely sealed, long-life vacuum switch
- Operational life of 50,000 open/close maintenance-free operations
- Replace maintenance-intensive oil switches
- Maximizes bank uptime and improves power quality

Elastimold®
- Separable connectors and solid-dielectric switchgear

Fisher Pierce®
- Faulted circuit indicators

Homac®
- Copper Flood-Seal® compression splice kits, substation connectors

Joslyn Hi-Voltage®
- Surge protection devices

JT Packard®
- Electrical and data system installation, inspection and maintenance services

Kopex-Ex™
- Explosion-proof raceway and conduit systems

When the reliable connection and intelligent control of electrical power are necessities, our wide product selection maintains and improves power quality, efficiency and reliability. From 120V to 230kV, our solutions are specified worldwide in the industrial, construction and utility markets.
Power quality is measured by fluctuations in electricity, such as momentary interruptions, voltage sags or swells, flickering lights, transients, harmonic distortion and electrical noise. ABB power solutions provide clean, dependable electric power and minimize these fluctuations.
Civil infrastructure systems require solid connections for power and communication, whether they operate in arctic, desert or tropical conditions. ABB components protect those connections from exposure to the elements.
Extreme temperature protection

ABB is a reliable and experienced partner when it comes to protecting your cables and connections in the harshest temperatures.

Our solutions ensure that connections remain properly shielded against extreme temperatures and provide uninterrupted transmission of power and data. We provide tried and tested products for a wide variety of applications.

Ty-Rap®
- **Extra-high temperature nylon cable ties**
  - For use in temperatures from -40°C to 150°C
  - Feature “The Grip of Steel®” stainless steel locking device and offer infinite adjustability

Ty-Rap®
- **Heavy-duty stainless steel cable ties**
  - For use in temperatures from -80°C to 538°C
  - Available in both Type 304 and Type 316 stainless steel
  - Quick, easy installation and secure locking

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

T&B® Fittings – LTXE Liquidtight flexible metal conduit
- Supports operating temperatures from -60°C to 150°C (up to 165°C intermittent)
- Flammability rating of UL94-HB
- Standard flexible metallic core with temperature resistant TPU outer jacket

Kopex-Ex™
- Explosion-proof raceway and conduit systems

PMA® – High-temperature nylon conduit and fittings
- Comply with the highest international fire safety regulations regarding flammability, smoke and toxicity
- Excellent mechanical impact strength even at low temperatures

Adaptaflex®
- Cable protection systems – Conduit and connectors

EZCODE®
- Danger/warning labels and signs, industrial markers, barricade/burial tapes and wire markers
Services & training

In the highly specialized field of electrical equipment design, installation and inspection, the manufacturer plays a key role in helping customers understand the nuances of their equipment.

Our services

Blackburn®
- The QTP program provides a guaranteed two-week shipment of Blackburn® products
- Configurator enables special connectors to be designed with a guaranteed two-week shipment
- Product specification specialists and Mobile Technical Specialists are available nationwide to train in the proper use and installation of Blackburn® and Color-Keyed® products
- Inside Tech Support group provides 24/7/365 expertise for Color-Keyed® and Blackburn® products
- Full tool service as well as loaner and tool leasing programs

Joslyn Hi-Voltage®/Elastimold®
- Power & High Voltage Field Service group provides field maintenance for Joslyn Hi-Voltage® and Elastimold® equipment

Ocal®
- Onsite installation training provides a review and hands-on practice of clamping, cutting, threading, assembling and repairing the Ocal® PVC-coated conduit system
- Training also extends warranty from two to five years on a system installed by a certified contractor

Additional services & training
- Onsite NEC® Update Training
- Onsite Grounding and Bonding Training
- Free online CAD Library for downloadable 2D and 3D models in more than 90 native CAD file formats

Elastimold®
- High-voltage separable connectors and solid-dielectric switchgear.

Furse®
- Exothermic welds and lightning protection.

Ocal®
- Ocal installation certification training.

Ty-Rap®
- Ty-Rap Tote® cable tie dispensers and ergonomic installation tools.

NEC® and the National Electric Code® are registered trademarks of the National Fire Protection Association, Inc.
ABB field application engineers are available to provide field training on Elastimold® medium-voltage cable accessories and switchgear.
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 Installation Products
Continuous operation and sustainability

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Corrosion and harsh environment protection

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Total project cost reduction

06 Installation Products
Liquid ingress protection

07 Installation Products
Extreme temperature protection

08 Installation Products
Grounding and bonding

09 Installation Products
SKU Reduction
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.
At ABB, we understand the challenges faced in civil infrastructure. We’re focused on providing electrical solutions that address the critical issues in every transportation sector, so you can focus on sustainability, cost, quality, flexibility, safety and regulatory compliance.