



# GCP for Mass Transit

## GCP products have been used on Mass Transit projects around the world for almost half a century.

EMEA1	
Bangalore Metro Rail Corp. Ltd. (BMRCL)	India
Barcelona Metro	Spain
Budapest Metro	Hungary
Copenhagen Mini Metro	Denmark
Crossrail	UK
Dubai Metro	UAE
Grenoble Tramway	France
London Underground	UK
Lyon Tramway LTS	France
Metro de Sevilla	Spain
MM Metro Milan	Italy
Nantes Light Rail	France
Nice Tramway Line	France
Paris Metro	France
Sofia Metro	Bulgaria
St Etienne Metro	France
St. Petersburg Rail Terminal	Russia
Warszawa Metro	Poland

ASIA PACIFIC	
Beijing Metro	China
Brisbane Eastern Busway Terminal	Australia
Busan Metro	Korea
Guangzhou Metro	China
Hanzhou Subway	China
Harbin Subway	China
Hong Kong MRT	China
Kuala Lumpur LRT	Malaysia
Nagoya Metro	Japan
Nanjing Metro	China
Seoul Metropolitan Subway	Korea
Shanghai Maglev	China
Singapore Metro	Singapore
Taipei Metro	Taiwan
Tianjin Metro	China

*"You can't understand a city without using its public transportation system."*

– Dr. Erol Ozan

AMERICAS	
DART (Dallas Area Rapid Transit)	USA
Los Angeles Metro	USA
MARTA (Metropolitan Atlanta Rapid Transit Authority)	USA
MBTA (Massachusetts Bay Transportation Authority)	USA
Metro Fortaleza Brazil Metro Ipanema (Rio de Janeiro)	Brazil
Metro Panamá Panama Metro São Paulo Brazil Miami Metro Rail	USA
NJ Transit Authority	USA
NYCTA (New York City Transit Authority)	USA
San Francisco BART (Bay Area Rapid Transit)	USA
San Mateo Transit Center USA Seattle Sound Transit Light Rail	USA
Société de transport de Montréal (STM)	Canada
Toronto Transit Authority	Canada
WMATA (Washington Metro Area Transit Authority)	USA

## GCP Capabilities

GCP's products have a long and successful track record on metro systems around the world. From the first (London) to the biggest (New York); to the busiest (Seoul ); to the longest (Shanghai), GCP's waterproofing, fireproofing and/or specialty concrete admixtures products have been used on all of these systems, as well as on more than 50 others globally.

Water and moisture intrusion, structural and aesthetic deficiencies in concrete or inconsistencies in fire protection can cause significant damage to the Mass Transit infrastructure, resulting in high replacement

costs, lost revenue, and serious disruption in travel. This is why designers from around the world turn to GCP Construction Products' solutions to protect these crucial elements of today's modern transportation environment for the life of the project. Designers often select GCP products to enhance the durability and sustainability of their projects.

Working on projects across borders and continents has become a common and necessary practice in recent years. GCP has a global network of experts to assist and ensure that projects run smoothly - from the earliest design phases through construction and completion. GCP's team provides both design services and site services and consists of some of the most experienced and engaged people in the field. Our broad technology portfolio allows for a variety of solutions regardless of the design or location.



1 Bangalore Metro Rail Corp. Ltd. (BMRCL)  
India  
2 Crossrail UK  
3 San Francisco BART (Bay Area Rapid Transit)  
USA

4 Seoul Subway, Korea  
5 Metro Panamá, Panama  
6 Société de transport de Montréal (STM)  
Canada

7 Paris Metro, France  
8 Dubai Metro, United Arab Emirates  
9 New York Grand Central Station, USA

10 Shanghai Maglev, China  
11 Metro São Paulo, Brazil  
12 Singapore Metro, Singapore

## GCP Brands are Globally Recognized



## Mass Transit Applications

### **Waterproofing Underground Stations & Tunnels**

Stations underground require a dry environment to ensure continued operations, safety and aesthetic appeal. All GCP structural waterproofing membranes, whether pre-applied to the substrate in confined spaces or post-applied to the structure, develop an adhesive bond to the concrete. This bond creates a uniform and continuous waterproofing system, preventing lateral water migration and protecting the structure from the devastating effects of water infiltration.

GCP's waterproofing, waterstops and drainage solutions have been successfully used for over 40 years to protect cut and cover tunnel structures around the globe. More recently, GCP products have been used in conventional tunnel lining applications. With its complete line of fully-adhered waterproofing systems, GCP is a single source for maximum protection against water pressure, ground settlement, and contaminants such as chlorides, sulphates, radon and methane or other industrial site contamination.

### **Soil Stabilization**

Underground construction often involves unforeseen and challenging soil conditions. Subsurface water, fractured rock, or unstable sands are just a few of the conditions that can be encountered. GCP offers solutions with two component polyurethanes, low viscosity acrylate resins and microfine cements to stop water, stabilize soils and keep projects on schedule.

### **Above Ground Stations & Buildings**

Protecting people and spaces above ground from the elements is just as important. GCP's sheet, liquid and hybrid membrane systems are engineered specifically for each part of the building envelope.

### **Elevated Decks/ Green Roof**

Above ground horizontal surfaces include station plazas, podiums, green roofs and platforms. GCP's waterproofing membranes and drainage composites are applied directly to the structural deck and typically covered by a permanent wearing surface.

### **Station Platforms**

In addition, certain GCP membranes provide excellent electrical insulation properties for use on platforms in both underground and above ground stations.

### **Engineered Façade**

Weather-resistive barriers are an integral component of the engineered façade or wall assembly. Regardless of the wall design or geographic location of the project, GCP offers a complete line of fully-adhered permeable and impermeable solutions to ensure proper wall performance and integration with other portions of the building envelope.

### **Sloped Roof**

GCP's roofing underlayments have set the standard globally on some of the most intricate roof designs and demanding climatic conditions. Aesthetically pleasing, architectural sloped roof systems are designed to shed water quickly and are not always successful at preventing leaks caused by wind driven rain, snow, ice melt and at critical detail areas and complex geometries. A properly designed roofing underlayment membrane can offer superior in place performance and leak protection for the design life of the structure.

### **Structural Concrete**

GCP offers a wide variety of admixtures and fibers to meet design and construction requirements for mass transit systems. Corrosion inhibitors cost effectively protect reinforcement in parking structures and viaducts. Cracking in slab on ground and platforms comprised of composite steel decks are mitigated through the use of synthetic macrofibers and shrinkage reducing admixtures.

### **Architectural Concrete**

GCP's integral color, surface retarders and high range water reducers are combined to create architectural precast panels, precast/prestressed elements, and decorative concrete pedestrian areas. Designers use contrasting pavement finishes to help with zoning and direction finding.

### **Fire Protection**

Passive Fire Protection is critical for life safety and protecting the structural integrity of the steel members and concrete in enclosed transit systems from fire damage. GCP's high and ultra-high density spray-applied cementitious fireproofing is proven to protect against the most severe fire exposures and withstands air erosion, abrasions, impact damage, corrosion, and extreme environments. GCP also offers polypropylene microfibers that greatly improve the spalling resistance of concrete when exposed to extreme fire temperatures.

### **Maintenance and repair solutions**

Over time, even the best designed underground transit systems develop leaks. GCP offers the latest chemical grout technology with the DeNeef line of polyurethane and acrylate grouts. These innovative products provide permanent leak sealing solutions that stop water and protect the reinforcing steel. Rapid cure times allow for the fast turnaround schedules with minimal disruption to transit service.

## GCP technical experts can assist throughout your project delivery process

- Recommend the optimal product solution for your project location.
- Work internationally with the project team throughout the entire design and construction process.
- Provide jobsite expertise and support.
- Facilitate global projects in all major construction segments.

GCP supplies products to more than 120 countries worldwide, through its plants and facilities in more than 40 countries, supported by a team of almost 6,000 people.

### **Key regional offices include:**

UK (London), France (Paris), Italy (Milan), Belgium (Brussels), Poland (Warsaw), Turkey (Istanbul), U.A.E. (Dubai), Saudi Arabia (Dammam), India (Delhi), China (Shanghai, Hong Kong), Singapore, South Korea (Seoul), Australia (Sydney), USA (Boston, Chicago, San Francisco), Brazil (Sao Paulo) and many more locations globally.

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