



Technology for a better future



About us

Underground Construction Technology Specialist

Umat (Thai) Co., Ltd. was formerly Underground Material and Technology Co., Ltd. founded in 2013, established by underground construction professionals with experience in supplying of materials, chemicals and equipment for Tunneling, Hydropower and Ground Stabilization in Thailand and Lao PDR.

UMAT aims to be a leader and one stop service in supplying materials and technology for underground construction projects in this region. We focus on choosing quality products from source of world- class company to support the needs of each project. Our professional engineering team will advise and share their expertise on products, mix design, on site trials as well as after-sales service. We guarantee satisfaction from our service.



Our Product

TBM

Locomotive and Rolling Stock

Tunnel locomotive is a type of locomotive used in construction by shield tunnel boring machines excavation method to transport equipment, material, muck, concrete segment and personnel. UMAT is corporation with locomotive manufacturer, CRRC Lanzhou Co., Ltd., will adhere to the quality policy of "starting from me and satisfying users", uphold the enterprise value of "being honest, doing well and achieving success", rely on advanced technology, sophisticated equipment and high-quality staff, wholeheartedly provide high-quality products and services for customers at home and abroad, and create a better future with you.



Rail Switch is a mechanical installation enabling railway trains to be guided from one track to another. UMAT offer Rail Switch Systems for customer needs such as Y - Type, N-Type (Right), N-Type (Left).



TBM Cutters and Wire Brush Seals

UMAT offer TBM accessories and spare parts for customer needs. We mainly provide the TBM Cutters as below

- Soft Ground Cutters
- TBM Disc Cutters
- TBM Disc Cutter Rings
- Wire Brush Seals



Backfill Grout Mixing Plant and Feeding System

Backfill Grout Mixing Plant is important part of Grout Solution Transport. UMAT can design equipment to suit the needs and budget according to the project of the customer. We can refurbishment of used equipment for customer as well.



Backfill Grout Materials

UMAT understands the performance requirements and the difficulties our customers have in designing specific grouts, whether single component, active and non-active, A+B grout mixes, etc. based on the TBM equipment and logistics available. UMAT have a full range of admixtures to suit all backfill grout application methods, together with experts in the field to support you all the way.



Soil Conditioning Foams / Clay dispersants

UMAT understand how the geological conditions can change from one advance to the very next and the need to adjust technology parameters (FIR & FER) such as using Soil Conditioning Foams to ensure the highest excavation efficiency of all soil types, whether sandy silt, clay or highly abrasive rock.



Tail Grease Products

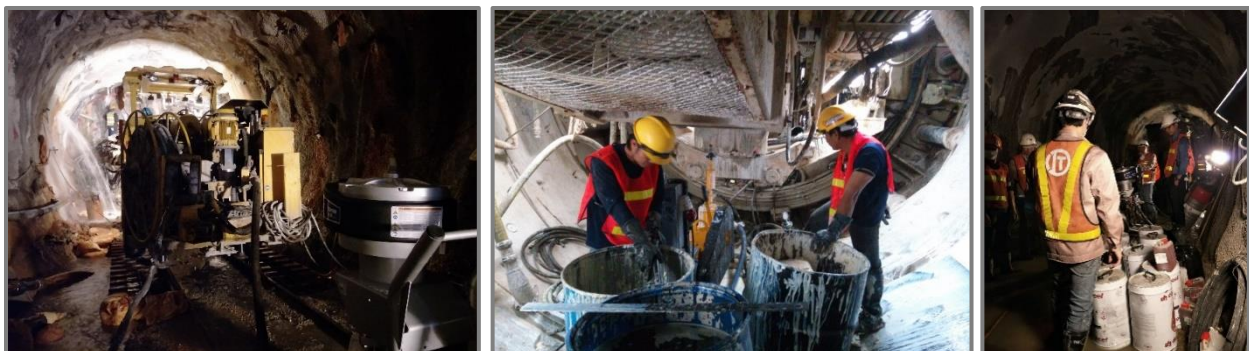
UMAT offer a selection of tail grease products inclusive of first fill grade suitable for use in shielded tunnel boring machine (TBM), where wire brushes are used to form a barrier between the tail shield and concrete segments. Our tail grease products effectively seal off any ingress of water, muck and backfill grout back into the tailend of the TBM. The tail grease range shows excellent adhesion properties to all substrates and good pumping properties.



Injection and Grouting

Water ingress in tunnels can have catastrophic consequences to the structural integrity, the surrounding environmental area, safety and to the cost of a project. This has created a demand for higher performance grouting materials.

UMAT have full range of pre and post injection technologies to suit all rock and soil conditions, including Grout Enhancing Admixtures, bentonite, sodium silicate, microsilica solution, microfine and ultrafine cements, colloidal silica gels, polyurethanes, acrylic gels and combination grouts



Concrete Admixture

Our Global Construction Chemicals partnerships have been specially developed using cutting edge technology for all types of Concrete. They are especially effective where only poor-quality aggregate and sand grading are available and significantly enhance the ultimate performance.

Sprayed Concrete Accelerators

UMAT supply accelerators for high performance alkali-free accelerators and sodium silicate base for Sprayed Concrete applications. With a typical dosage rate of 5% - 6%, its unique function also suppresses dust development, providing for a cleaner working environment.



Hydropower

UMAT have solutions to enhance concrete placing efficiency and optimizes overall concrete performance for all types and grades of pre-cast, pumped and conventional concrete (CVC), roller compacted concrete (RCC) and sprayed concrete.

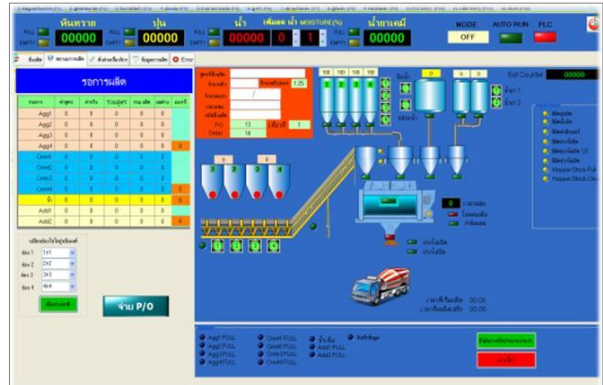
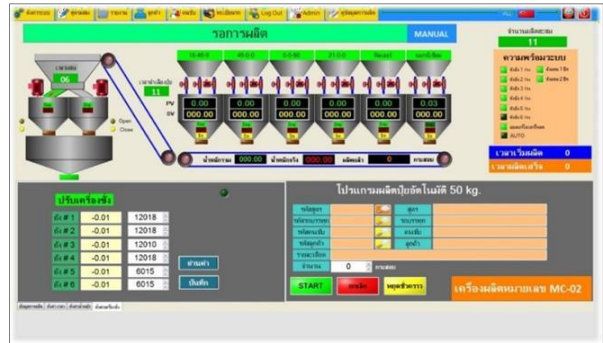
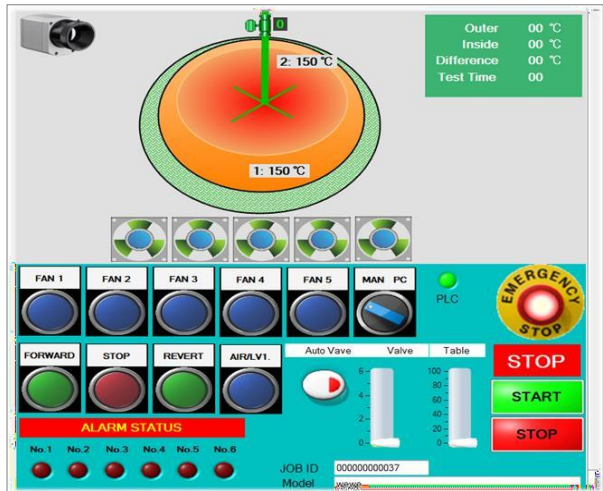


Our Service

PLC Customized Solution

UMAT provides specialized design and programming solutions for fully and partially automated plants and factories. Our services include the installation of machinery, pipelines, water pumps, and electrical wiring tailored to industrial applications.

We are confident that our well-trained and dedicated team will consistently deliver the best results, ensuring that we meet our customers' needs with the most suitable solutions for their business requirements. Trust UMAT to enhance the efficiency and effectiveness of your operations.



Locomotives Preventive Maintenance & Refurbishment

Preventive maintenance for locomotives and rolling stock encompasses a comprehensive set of technical, administrative, and managerial activities aimed at maintaining or restoring railway vehicles to a condition where they can effectively perform their required functions. Rather than waiting for failures or malfunctions, preventive maintenance involves regular and planned interventions to ensure vehicles remain in optimal condition.

These procedures can vary widely depending on specific needs, but core activities typically include inspections, part replacements, lubrication, and other technical interventions, all conducted at predetermined intervals or based on defined criteria.

UMAT is certified by **CRRCLanzhou Co., Ltd.** as an authorized official distributor and technical service provider in Thailand. We are equipped to support product specifications, operations, inspections, troubleshooting, and maintenance in accordance with manufacturer standards. Trust UMAT to ensure the reliability and efficiency of your railway assets.





Project Reference List

No	Period	Projects	Customers	Products
1	2014 - 2017	BMA Bang Sue Drainage Tunnel	Nawarat Patanakarn Public Company Limited	Grout Mixing Plant Rubber Sealing Strip 3V C2045, 3V F203 (Steel Segment) Corner Seal 5V F601 Volcon - Bentonite UMAT CBS - Stabilizer UMAT PGA1 - Sodium Silicate Natorfluid FA - Soil condition foam Superseal L - Polymer Superseal P - Polymer Screw conveyor Bentonite Mixing tank Transfer Pump System in tunnel Cleaner ball
2	2015 - 2021	Mae Ngad - Mae Guang Irrigation Tunnel in Chaingmai	Italian-Thai Development Public Company Limited	UMAT PGA1 - Sodium Silicate PU Injection Resin HA Cut AF with HA Cut SXF AF
3	2015 - 2017	MRT Blue Line Extention	Kenber Geotechnic (Thailand) Company Limited	PU Injection Resin Rockmax PU 100 Rockmax PU200 HA Cut AF HA Soil AF
4	2016	ASEAN Potash Mine Chiayabhum	Kenber Geotechnic (Thailand) Company Limited	PU Injection Resin Rockmax PU 100 HA Cut AF
5	2016 -2017	Green Line Project Pipe jacking	Nawarat Patanakarn Public Company Limited	Superseal P - Polymer Superseal L - Polymer Volcon - Bentonite
6	2016-2017	MEA Prakhanong Electricity Cable Tunnel	Nawarat Patanakarn Public Company Limited	3V FDR 244 - Rubber Sealing Strip 3V SF2035 - Rubber Sealing Strip 5V F601 - Corner Seal Natorseal TAW 3Q - First Fill Grease Natorseal TAW 2Q - Tail Seal Grease Natorfluid FA - Soil condition foam Volcon - Bentonite UMAT CBS - Stabilizer UMAT PGA1 - Sodium Silicate
7	2016	Phu Bia Mining LAO PDR.	Max3G Corporation Co.,Ltd.	BarChip BC48 - Synthetic fibre



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8	2017	BMA Sewerage Tunnel Bung Nong Bon	ST-SG JV Sino Thai E&C / Summit Grade	Grout Mixing Plant and Feeding system Transfer Pump System in tunnel
9	2017-2019	Red Line - Bang Sue	Kenber Geotechnic (Thailand) Company Limited	PU Injection Resin - HA Cut AF
10	2018-2019	MEA Chidlom Electricity Cable Tunnel	Italian-Thai Development Public Company Limited	Natorseal TAW 3Q Natorseal TAW 2Q Natorfluid FA - Soil condition foam Volcon - Bentonite Pozzolith 55R - Stabilizer UMAT PGA2 - Sodium Silicate UMAT PGA1 - Sodium Silicate
11	2018	MRT Linkage Underpath Tunnel Samyan - Samyan Mitr Town MRT Station	Nawarat Patanakarn Public Company Limited	GFRP Rebar - Diameter 28 mm GFRP Rebar - Diameter 10 mm UMAT PGA1 - Sodium Silicate
12	2018-2019	Mae Sruay Dam Renovation Chaingrai	Kenber Geotechnic (Thailand) Company Limited	Hydroswell Sealant Swellseal Mastic
13	2018-2020	Nam Theun 1 Hydro Power Plant LAO PDR.	CMC/ITD/Songda JV	Rheobuild 1008 - Admixture
14	2018-2021	MRT Orange Line Contract E3	Italian-Thai Development Public Company Limited	MasterRoc TSG7 - First Fill Grease MasterRoc TSG6 - Tail Seal Grease MasterRoc SLF 30 - TBM foam Drillcon 9 - Bentonite Pozzolith 55R - Stabilizer UMAT PGA2 - Sodium Silicate
15	2018-2021	MRT Orange Line Contract E1&E2	CKST JV Ch. Karnchang / Sino-Thai Joint Venture	Drillcon 9 - Bentonite Pozzolith 55R - Stabilizer MasterRoc TSG7 - First Fill Grease MasterRoc TSG6 - Tail Seal Grease MasterRoc SLF 30 - TBM foam
16	2019 - 2020	MRT Orange Line Contract E1&E2	Hicrete Products & Technology Company Limited	Sealing Strip 3V C2255 Corner Seal 3V F601 BT 99 - Adhesive



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17	2019	Huay Nam Ree Reservoir Uttaradit	Kenber Geotechnic (Thailand) Company Limited	PU Injection Resin - HA Soil AF
18	2019	Nam Ngum 2 Hydro Power Plant LAO PDR.	Kenber Geotechnic (Thailand) Company Limited	PU Injection Resin - HA Cut AF
19	2020	BMA Water Bank Srinakarin - Krungthep Kreetha	Nawarat Patanakarn Public Company Limited	GFRP Rebar - Diameter 18 mm GFRP Rebar - Diameter 20 mm Pilogel - Bentonite
20	2020	Kawa Haus	Kenber Geotechnic (Thailand) Company Limited	PU Injection Resin - HA Cut AF
21	2020-2021	BMA Sewerage Tunnel Bung Nong Bon	ST-SG JV Sino Thai E&C / Summit Grade	MasterRoc TSG6 - Tail Seal Grease UMAT PGA2 - Sodium Silicate Pozzolith 55R - Stabilizer
22	2021	Sansara Hua-Hin	Kenber Geotechnic (Thailand) Company Limited	PU Injection Resin - HA Cut AF
23	2021	Nam Ngeip 1 Hydro Power Plant LAO PDR.	Kenber Geotechnic (Thailand) Company Limited	PU Injection Resin - HA Cut AF
24	2021-2022	Mae Taeng - Mae Ngad Irrigation Tunnel in Chaingmai	Siamphan Wattana Public Company Limited	UMAT SHOT AF21 - Shotcrete Accelerator
25	2022	Mae Ngad - Mae Guang Irrigation Tunnel in Chaingmai	Italian-Thai Development Public Company Limited	UMAT SHOT AF21 - Shotcrete Accelerator
26	2022	MWA Water Transmission Tunnel Contract: G-TN-9D	Ch. Karnchang Public Company Limited	12T Lithium Battery Locomotive and Rolling Stock Rail switch and Car shifter
27	2023	MWA Water Transmission Tunnel Contract: G-TN-9B	ITD-NWR JV (NWR Section)	Refurbishment of Grout Plant UMAT FS 230 - Surface Feeding System
28	2023	MWA Water Transmission Tunnel Contract: G-TN-9B	ITD-NWR JV (ITD Section)	Primary Grout Materials Pilogel SP100C - Bentonite UMAT PGS - Stabilizer UMAT PGA2 - Sodium Silicate



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29	2023	BMA Drainage Tunnel Project Klong Prem Prachakorn	ITD-NWR JV (NWR Section)	UMAT GP 10220 -Grout Mixing Plant UMAT FS230 -Surface Feeding System UMAT TS230 -Transfer Feeding System in Tunnel 25T Lithium Battery Locomotive and Rolling Stock
30	2023	MRT South Purple Line Project Tao Pun - Rat Burana (Kanchanapisek Road) Section Contract C3	ITD-NWR MRT JV (NWR Section)	UMAT GP 10220 -Grout Mixing Plant UMAT FS230 -Surface Feeding System UMAT TS230 -Transfer Feeding System in Tunnel
31	2023	MWA Water Transmission Tunnel Contract: G-TN-9D	Ch. Karnchang Public Company Limited	Concrete pump track RG610
32	2024	MRT South Purple Line Project Tao Pun - Rat Burana (Kanchanapisek Road) Section Contract C3	ITD-NWR MRT JV	45T Lithium Battery Locomotive and Rolling Stock
33	2024	MRT South Purple Line Project Tao Pun - Rat Burana (Kanchanapisek Road) Section Contract C4	Unique Engineering and Construction Public Company Limited	Sodium Silicate for TAM Grout UMAT GBP 10 -Grout Mixing Plant UMAT FS 3015 -Surface Feeding System
34	2024	MRT South Purple Line Project Tao Pun - Rat Burana (Kanchanapisek Road) Section Contract C1&C2	CKST-PL JV	15T Segment Car RG610 12.5 m3 Muck Car RG910 Rail Switch Refurbishment of 12T lithium battery locomotive and PM service



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35	2024	MWA Water Transmission Tunnel Contract: G-TN-9B	ITD-NWR JV (ITD Section)	Concrete pump track
36	2024	MRT South Purple Line Project Tao Pun - Rat Burana (Kanchanapisek Road) Section Contract C3	ITD-NWR MRT JV (ITD Section)	Sodium Silicate for TAM Grout

“ Underground Construction Technology Specialist “

TBM ACCESSORIES

INJECTION & GROUTING

CONCRETE ADMIXTURE

SERVICE & MAINTENANCE

CONTACT US

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