



# RAILWAY ROADS ENGINEERING



## TRAKCJA GROUP

The Trakcja Group consists of companies specializing in the key sectors of infrastructure, energy, industrial and general construction. We operate in Central and Eastern Europe, especially in Lithuania, Latvia and Ukraine, as well as in Germany and Sweden.

We carry out the most complex contracts in the field of railway, tram, and trolley bus construction. We specialize in the construction of roads, bridges, engineering and cubic structures and in the field of environmental engineering.



# 70

YEARS

of experience  
in innovations

An important area of our business activity is the electric power industry, where we act as a contractor for distribution and transmission networks and as a manufacturer of equipment for power supply systems for railway and tramways. We provide comprehensive implementation of contracts, including design services.

# 12

## AREAS

we perform  
projects in  
all sectors of  
infrastructure  
construction

## COMPETENCES OF THE TRAKCJA GROUP



Construction and comprehensive modernization of rail infrastructure, including track and catenary, engineering facilities, platforms, and small architecture.



Construction and modernization of streets, roads, highways with accompanying infrastructure: sidewalks, bicycle paths, lighting, etc. Production of bituminous masses and concrete.



Construction and installation of low and medium voltage switchgears for railway, tram and trolley bus catenary. Production of catenary support structures.



Construction and modernization of catenary substations that supply power to railways and public transport such as trams and trolleybuses. Construction of high, medium and low voltage cables and overhead lines.



Implementation and modernization of bridges and overpasses.



Comprehensive design for railway, road, power, engineering and civil construction sectors.



Construction of tram and trolleybus infrastructure.



Installation of photovoltaic farms.



Implementation of projects in the field of environmental engineering, including water supply networks and interceptors, sanitary sewers, wastewater treatment plants and pumping stations, and reinforced concrete tanks, facilities related to environmental protection.



Construction of buildings for various uses and housing estates.



Employee leasing.




Equipment rental.

# 271

## CONTRACTS

completed in the  
last 5 years, with  
the value of  
PLN 10,900 million\*

-  RAILWAY
-  ROADS
-  POWER ENGINEERING
-  URBAN INFRASTRUCTURE
-  BUILDING DESIGN
-  DESIGN AND CONSTRUCTION
-  ENGINEERING FACILITIES
-  ENVIRONMENTAL ENGINEERING



\* net value of contracts in which consortium members were involved



## SELECTED CONTRACTS



### RAILWAY

- Design and modernization of the railway line on section Bronów - Wisła Głębce
- Modernization of the Warsaw-Poznan railway line on section Sochaczew - Żychlin and Placencja - Łowicz Główny
- Design and execution of construction works on the E20 railway line Siedlce - Terespol



### ROADS

- Design and construction of the S61 Szczuczyn - Budzisko expressway on section Etk Południe junction - Wysokie junction
- Development of the road and track system Ogrodowa - Północna Streets Łódź
- Redevelopment of Liberty Square in Łódź.
- Reconstruction of the communication system of Grójecka, Harfowa and Raclawicka streets intersection
- Construction of a road interchange on the A4 Krakow - Tarnów motorway, on section Krakow Wieliczka interchange - Targowisko interchange



### POWER SUPPLY

- Renovation of A1 traction substation of Kabaty subway
- Renovation of the substation at A5 Ursynów station of the subway line 1 in Warsaw
- Construction of road lighting for the new S-3 Nowa Sól - Legnica expressway
- Construction of a single-track HV overhead and cable line 110 kV Przasnysz - Chorzele
- Modernization of the 10/15 kV station in Maków Mazowiecki.



### URBAN INFRASTRUCTURE

- Construction of a tram line connecting Fordonska Street and Torunska Street in Bydgoszcz
- Extension of the tram line in Olsztyn
- Installation of overhead catenary components on two five-kilometer sections each of the "electric highway" under construction as part of the ELISA eHighway Hessen project along the A5 freeway between Frankfurt am Main and Darmstadt, Germany



### VOLUME PROJECTS

- Construction of a modern equipment base in Bieńkowiec
- Construction of technical facilities for the Commuter Rail Łódź
- Construction of a training facility with infrastructure in Ząbki near Warsaw



## RAILWAY CONSTRUCTION TRACK WORKS

### TRACK SUPERSTRUCTURE

- Realization of railway pavement works in all pavement standards
- Realization of construction works for turnouts, track crossings, alignment instruments, retaining trestles;
- Development of crossing pavements;
- Construction, renovation, restoration of all types of in-depth and open drainage of the track superstructure;
- Realization of termite welds, welding rails in the track, mechanical ballast cleaning, mechanical ballast removal.

comprehensive machine park - locomotives, wagons (self-unloaders, platforms), RM80 cleaning machine, MFS 100 wagons, track tamping machines, profilers, rail welding machine;





#### EARTH STRUCTURES AND SUBSTRUCTURE WORKS

- Realization of embankment widening, construction of embankments;
- Any excavation and embankment earthworks;
- Reinforcement of railway embankments, construction of buttresses, protection and reinforcement of all kinds;
- Substructure stabilization and reinforcement works.

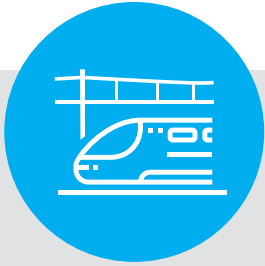
#### PASSENGER SERVICE STRUCTURES

- Construction of renovation and modernization of platforms;
- Construction of platform drainage;
- Development of small architectural elements – such as equipment of platforms and accesses to platforms;
- Development of ramps, accesses.
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#### BUILDINGS AND NOISE BARRIERS

- Construction, renovation and modernization of signal tower buildings;
- Construction of noise barriers along the railway infrastructure.





## RAILWAY CONSTRUCTION TRACTION WORKS

### SITE PREPARATION

- Conducting geological boreholes for the selection of pile foundations \*
- Selection of pile foundations \*
- Inspection excavations

### DESIGN WORK

- Development of planning permission, executive design and assembly design (assembly sheets, list of coordinates, phasing of works) \*

### ASSEMBLY WORKS - installation of support structures

- Driving of pile foundations, installation of poured and prefabricated foundations
- Installation of catenary poles, space poles and gate poles (supports)
- Installation of gantry girders, space extensions and girder supports
- Installation of rod lashings
- Installation of crossing warning signs, platform signs, EI-signals
- Painting of pole number plates and warning stripes
- Installation of number plates and hectometers on poles

### ASSEMBLY WORKS – installation of overhead line

- Installation of through, cross and turnout suspensions
- Installation of truck anchors, fixed anchors, center anchors, and TUN weightless anchors
- Overhead (cable and wire) DC-AC catenary e.g. YC150-2CS150, YwsC1202C-M-, C120-2C, C95-C
- Installation of single and double fixed hangers
- Installation of Y-type flexible suspensions with hangers
- Installation of insulation points in the network and insulation of contact wires in the stress clearance
- Installation of sectional insulators
- Electrical and mechanical connections of the turnout
- Installation of cone short-circuiters
- Installation of sectional disconnecter with drive including interconnections
- Regulation of overhead line

### ASSEMBLY WORKS – grounding, electric shock protection and return circuit

- Installation of grounding of support structures
- Installation of suspensions of the grounding cable on booms and brackets
- Hanging of group grounding line with installation of anchors
- Electrical connections of group grounding to support structures
- Installation of low-voltage arresters (short-circuits) with connection to rails
- Installation of inter-course, inter-track cables and turnout electrical connections
- Installation of PMT chokes
- Installation of grounding lines with a cross section of up to 120mm<sup>2</sup>
- Post-assembly adjustment, testing and inspection of group grounding line

### DISASSEMBLY WORKS

- Demolition of foundations\*, removal of debris, compaction of the area after the foundation
- Dismantling of support structures - traction poles, gate poles, space poles, gate girders, lashings and girder supports
- Dismantling of catenary - cable, wire, hangers, suspensions, anchorages, distance brackets, section insulators, disconnectors, splices,
- Dismantling of the return circuits - inter-course, inter-track, turnout connections

\* realized in cooperation with subcontractors.



## RAILWAY CONSTRUCTION SPECIALIZED SERVICES

We are the only general contractor for railway projects with its own technical base for railway vehicles.

The hall, with an area of more than 2,100 m<sup>2</sup>, has 3 tracks which allows us to provide services such as maintenance and repair of wagons, locomotives, track machines and special vehicles.

The technical base supports the company's own vehicles and external customers.



# 347

UNITS

of special railway  
and power  
engineering  
equipment\*

\*as of June 2022

We have an extensive fleet of specialized machinery and vehicles for track and catenary construction. These include network trains, stream paving trains, tamping machines, overhead cranes, ballast cleaners, specialized self-unloading wagons and piling machines, railway cranes, track machinery and many others.

We have our own diesel locomotives and are a certified rail carrier, so we are able to independently deliver materials directly to the job site. All equipment is operated by experienced operators.

We also own general construction equipment such as excavators, loaders, trucks, dump trucks, cranes and tankers, which ensures our ability to work in remote locations without interruption and to sell fuel to others. We provide specialized welding services for railway and tramway pavements.





## ROAD CONSTRUCTION

- Bituminous works
- Rail-road crossings
- Sanitary sector - storm and sanitary sewers, water supply networks
- Paving works
- Earthworks



## ENGINEERING FACILITIES

- Construction, repair and modernization of culverts, underpasses, footbridges, bridges, overpasses;
- Securing of excavations (including plunging of steel sheet piles, construction of Berlin-type support systems);
- carpentry, reinforcement and concrete work;
- Installation and removal of relief structures (GR has sets of relief structures);
- Installation and removal of track reinforcement of Swiss-type rail ties (GT has sets of ties on its own equipment);



## URBAN INFRASTRUCTURE

We actively participate in the development of urban infrastructure: we build and modernize tram and trolley bus lines.

We perform tasks in the field of installation of passenger infrastructure including overhead lines, we modernize control and power supply systems of lines, including traction substations and equip them with power switchgears of our own production. We also provide maintenance services for supplied equipment.







## POWER ENGINEERING CONSTRUCTION

### COMPETENCIES OF THE ENERGY DIVISION

- Design of cable and overhead lines and MV, LV substations
- Construction of traction substations supplying the railway
- Construction of cable and overhead medium and low voltage power lines,
- Construction of substations,
- Works in the field of installation of internal power installations and road lighting, as well as lighting in buildings

### ADDITIONALLY, WE HAVE COMPETENCE IN

- Design and construction of photovoltaic farms
- Design and construction of cable and overhead lines and HV substations
- Construction of traction substations to power public transportation vehicles like trams and trolley buses,

### POWER ENGINEERING INFRASTRUCTURE

We provide services in the field of construction, modernization, repair, and maintenance of electric power infrastructure. We implement, among other things, medium and high voltage overhead and cable transmission lines. As well as substations and switching stations for distribution companies.

# 68.5

THOUSAND M<sup>3</sup>

the largest  
building  
designed and  
built by Trakcja





## OTHER COMPETENCIES

### BUILDING CONSTRUCTION

includes the construction of public utility facilities, as well as those related to the operation of rail vehicles, such as train wash facilities and service halls combined with administrative areas.

We are also involved in real estate development. Among other things, we build individual houses, apartment buildings and housing estates. We are intensively developing our potential in the field of general construction.

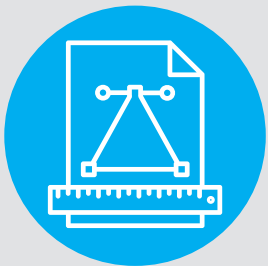


### ENVIRONMENTAL ENGINEERING

As a modern and responsible company operating in the construction market, we prioritize environmental engineering issues in the course of our activities.

We have many years/professional technical expertise for building/implementation of:

- networks and connections: water supply, sanitary sewerage, stormwater drainage, all diameters, and various materials,
- Sewage treatment plants, sewage pumping stations, reinforced concrete tanks,
- Protection of excavations with sheet piling walls.



### DESIGN

The activities of our Group are related to the provision of design services for the railway, road, industrial and energy sectors.

We prepare program and spatial concepts, feasibility studies, planning permission, executive designs, cost estimates and other types of tender and construction documentation.

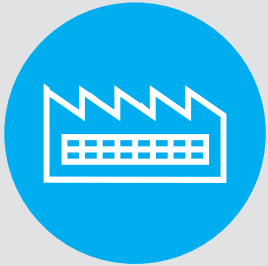
In this regard, we perform tasks that meet the needs of investors, Trakcja Group companies and the largest infrastructure construction companies in Poland. Thanks to our extensive and long-term experience, we offer comprehensive and technically advanced, proven and innovative solutions.

# 105

MANUFACTURED

rail, tram, trolleybus  
and medium-  
voltage 15 kV  
switchgears





## INDUSTRIAL PRODUCTION

### MEDIUM AND LOW VOLTAGE SWITCHGEAR

The basis of our offer is the production of medium and low voltage switchgears in the DC and AC range. Our products are recognized among customers for their high reliability and durability.

For more than 50 years, we have earned the trust of our customers by supplying switchgear for railways, trams and trolley buses.

### SUPPORT STRUCTURES

We are also a manufacturer of support structures for railway catenaries.

Catalog of steel structures:

[www.grupatrakcja.com/pl/oferta/produkcja/](http://www.grupatrakcja.com/pl/oferta/produkcja/)

We also fulfill individual orders.



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