

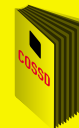
# COSSD PRODUCT CATALOGUE

for



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**WE ARE COMMITTED TO ASSESSING OUR CLIENTS' NEEDS  
TO EXECUTE ON OUR PROMISE OF VALUE ADDED QUALITY WORKMANSHIP**

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Copps offers key Engineering and Design Solutions, and the Copps' "Pin-to-Plate Advantage", a full suite of integrated foundation related services utilized in project execution.

Copps offers the following services:

**Engineering Solutions:**

- Deep Foundation Engineering and Design (APEGA #P11893)
- Project Planning
- Load Testing - Static Load Testing (SLT) and Pile Dynamic Analysis (PDA)

**Pin-To-Plate Execution:**

- Survey
- Drilling
- Bored Piles (Concrete Caissons)
- Continuous Flight Auger (CFA) Piles
- Steel Pile Installation
- Helical Pile Installation
- Piling Material Supply
- Pile Capping
- Shoring / Sheet Piling
- Foundation Related Earthworks
- Project Management
- Access Matting
- Equipment and Material Transport



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**Industries:**

***Oil and Gas***

Our primary focus to date has been major projects in the oil and gas industry. We are trusted partners with leading oil and gas companies who rely on us to help expand their operations. Finding solutions to unique challenges helps our Clients keep their projects on target. We have experience with almost every type of operation, from small pump jacks to steam assisted gravity drainage operations, to conventional oil and gas, pipelines, and oil sands mining.

***Utilities***

The need for power continues to rise, meaning more delivery systems are required to meet the demand. We have worked with industry leaders to build foundations for major power networks. Our team has planned and executed large projects with multiple distribution lines, substations and communication towers.

***Infrastructure***

Our experience lends itself well to highway grade separation, bridges and retaining wall projects. We have started projects in every season, and are able to address any ground conditions. We have successfully completed several civil engineering infrastructure projects.

***Commercial***

Depending on ground condition, building foundations can present unique challenges. The size and variety of our fleet of equipment allows for versatility and adaptability in completing building foundations. Whether it's a full scale camp, or a major institutional or commercial building, we are able to send the right piling equipment and personnel to get the job done.

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## Engineering Solutions:

### ***Deep Foundation Engineering and Design***

Our specialized team of professional engineers can provide design-build services for helical piles, driven piles, sheet piles, concrete caissons, CFA piles, pile caps, and other unique engineering foundation challenges. We can create solutions to optimize a design and provide alternatives, which speeds up the approval process and keeps the project moving. If an unforeseen geotechnical condition arises, we are able to review the problem and address it expeditiously.

### ***Project Planning***

Our experienced planning team will review all aspects of a project to ensure all considerations are addressed, and then develop a detailed execution plan. At this phase, our engineering team is also available to help find solutions to unique ground conditions or to optimize designs. Once the project requirements and scope are determined, we will develop a timeline and budget for the project. Coordinating schedules for foundation related earthworks can often pose challenges, but because this is a service offering of Copps, we are able to effectively schedule it into the scope of the project.

### ***Static Load Testing (SLT)***

We design, engineer and fabricate static load testing beams and pile connections. Static load tests can be applied to sacrificial piles to verify lower engineering design factors with the opportunity to decrease pile size or quantity, thus reducing project costs. Copps has provided static load tests at the onset of a number of large projects leading to cost savings for the Client.

### ***Pile Dynamic Analysis (PDA)***

Pile Dynamic Analysis (PDA) is an important step in the quality control process to confirm the pile's bearing capacity meets specifications. As a test pile is driven, dynamic measurements are recorded using strain transducers and accelerometers attached near the top of the pile.

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## Pin-To-Plate Execution:

### ***Surveying***

Our surveying team will ensure the pile layout is precisely followed. Survey services include foundation layout, pile cut-off elevations, pile cap layout, pile coordinate mapping, and pile and pile cap as built data.

### ***Drilling***

Copps provides air or auger drilling services for steel driven or helical piles to overcome adverse conditions such as frozen ground, rock and other hard formations. Drilling can speed up the pile driving process, and is used on sites where noise and vibration avoidance is required.

### ***Bored Piles (Concrete Caissons)***

Bored piles are commonly referred to as Cast-In-Place or CIP piles. We have the latest Tier 4 Soilmec piling rigs to complete projects with diameters from 300mm to 2000mm and depths up to 70m, subject to soil conditions. Bored piles are ideally suited to working in areas where noise and vibration needs to be minimized, such as built-up residential areas or where sensitive equipment is sited.

Pile design changes can be made on-site if conditions change, allowing further value engineering if piles need to be shortened or diameters increased. Piles are constructed by drilling a cylindrical hole, removing the soil and replacing it with a steel reinforcement cage and concrete. If required, the hole can be maintained using a temporary casing to prevent sloughing of loose granular material. As well as standard straight shaft piles, we offer under-reamed or belled piles, where the base of the pile is enlarged to create a larger surface area, increasing the bearing capacity.

### ***Continuous Flight Auger (CFA) Piles***

CFA piles utilize a hollow stem auger where concrete is pumped through the stem under pressure, maintaining the stability of the bore without the need for temporary casing. CFA piles are suitable for most soil types, but are particularly suited to collapsible soils with high water tables. This system offers two distinct advantages: there is no need for temporary casing, and the productivity rates are extremely high in comparison to standard bored piles.

### ***Steel Pile Installation***

We own and operate a large fleet of Junttan hydraulic piling rigs to safely and efficiently complete Client projects with the highest degree of quality. We provide stable foundations for a variety of applications and structures, such as pipelines, buildings, bridges, communication towers, etc. Driven steel piles typically range from 114mm to 900mm in diameter and 9m to 20m in length.

### ***Helical Pile Installation***

Copps offers the ability to install varying pile sizes horizontally, or at any angle, and can support tensile and compressive loads. Our helical pile installation equipment is mounted on tracks to provide access to areas with problematic subsurface conditions such as uneven or soft ground. To ensure quality control is maintained and engineered capacity is reached, the units are equipped with torque monitoring systems capable of recording real-time digital measurements.



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### ***Piling Supplies***

Copps maintains a large inventory of piling material such as pipe piles, helical piles, h-beams, sheet piles, wood piles, pile caps and pile shoes and tips. We regularly order shipments of material from domestic and overseas mills, enabling cost-competitive pricing.

### ***Pile Capping – Foundation Related Welding***

Our team of experienced CWB certified welders perform final pile cut-offs and cap welding, and manufacture and supply helical piles, pile caps, bracing and sleepers.

### ***Shoring / Sheet Piling***

Copps maintains specialized equipment which is interchangeably used on the Junttan pile drivers to provide sheet piling barriers for earth or water retention. In addition, excavation support can be provided in areas with a high water table.

### ***Foundation Related Earthworks***

We provide earthwork services specifically related to the installation of piles or pile caps, including:

- bulk excavation after subgrade preparation for the installation of lower piles, referred to as “bath-tubbing”
- removal of shallow underground obstructions that may hinder piling operations
- detailed foundation excavation in or around piles to allow for installation of steel pile caps or concrete foundations
- backfill in or around pile-specific excavations

### ***Project Management***

We have a proven track record of managing large scale projects. We identify any potential timeline impacts using our proprietary digital pile installation data system, Copps Management System (CMS), thus mitigating any issues early on. The dedicated project manager can coordinate all aspects of the project to keep it on budget and on schedule.

### ***Access Matting***

Copps can provide durable wood or steel interlock matting to allow access to sites with unstable ground conditions, to offer environmental protection, and to ensure the safety of workers and equipment.

### ***Equipment and Material Freight***

Copps owns and operates a large fleet of tractors and trailers to transport piling materials and equipment. We offer in-field transport of equipment and material from laydown yards to worksites. The size and variety of our fleet allows us to respond quickly and efficiently to Client needs. We are committed to Preventative Maintenance and adhere to a strict maintenance schedule. Our entire fleet undergoes regular, routine inspections to ensure it is maintained to the highest standards and performs at peak capacity.



## **Contact Details:**

**Call us Toll Free: 1-866-887-3606**

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