AFINITAS

BFS
High Pressure Concrete Pipe Equipment

Manufacture with confidence:

- Pre-stressed Concrete Cylinder Pipes (PCCP Pipes)
- Pre-stressed Concrete Spun Pipes (PCSP Pipes)
- BFS service and support from start to finish

www.afinitas.com

A Legacy of Pipe Innovation

Afinitas company BFS has been designing and producing quality high pressure concrete pipe equipment for more than 50 years. BFS technology has influenced the development of the pressure pipe production equipment used today worldwide. Therefore, BFS technical specialists are a valuable resource to assist with the design and implementation of complete turnkey plants, from the feasibility studies to the commissioning of the plant. In addition, BFS equipment meets the pipe production requirements of both European requirements (EN) and those of the American Water Works Association (AWWA) and most other rigorous standards for quality. For these reasons, whether you are producing Pre-stressed Concrete Cylinder Pipes (PCCP Pipes) or Pre-stressed Concrete Spun Pipes (PCSP Pipes), BFS expertise helps you manufacture with confidence.

BFS Service Never Stops

From the start of the project, BFS is there to help you select the right system to meet your specific requirements. To assist in this, the BFS team provides an initial design of the factory layout as well as pertinent technical and financial details. Once your system has been selected, BFS will manufacture the equipment in order to match your specifications and to ensure it is expertly installed and commissioned. Further, BFS technicians are there for the start up of your production run and to provide training to your personnel to achieve the best quality products.

Pre-stressed Concrete Cylinder Pipes (PCCP)

PCCP pipes are mainly manufactured in two different ways:

- PCCP with steel cylinders embedded into the concrete (ECP)
- PCCP with steel cylinders lined by concrete (LCP)

BFS offers a complete line of machines and ancillary equipment for both manufacturing methods. When using the vertical casting process, a steel cylinder is embedded inside the pipe concrete wall. The steel cylinder guarantees impermeability at operating pressures more than 20 bar (290 psi). After steam curing, the core is typically circumferential pre-stressed using a machine to wind a cold drawn high tensile steel wire designed to counteract the working pressure of the designed pipeline.

PCCP Pipes: BFS Production Equipment Features:

- Specific design of vertical moulds
- Strong and solid mould construction
- Easy hydraulic openings of inner and outer mould
- Uniform concrete distribution by a specifically designed motorized cone
- Strong vibration on the inner and outer mould by means of turbo vibrators
- Clever progressive vibrating system along the mould
- Steam curing of each casting mould
- BFS circumferential pre-stressing machine which is very reliable in maintaining the constant pull and pitch of the steel wire along the entire length of the pipe, for an optimal and uniform resistance to pipeline water pressure.
- MRC machine to perform an accurate concrete compacted coating protection of the post compression steel spiral

Pressure Pipe Sizes

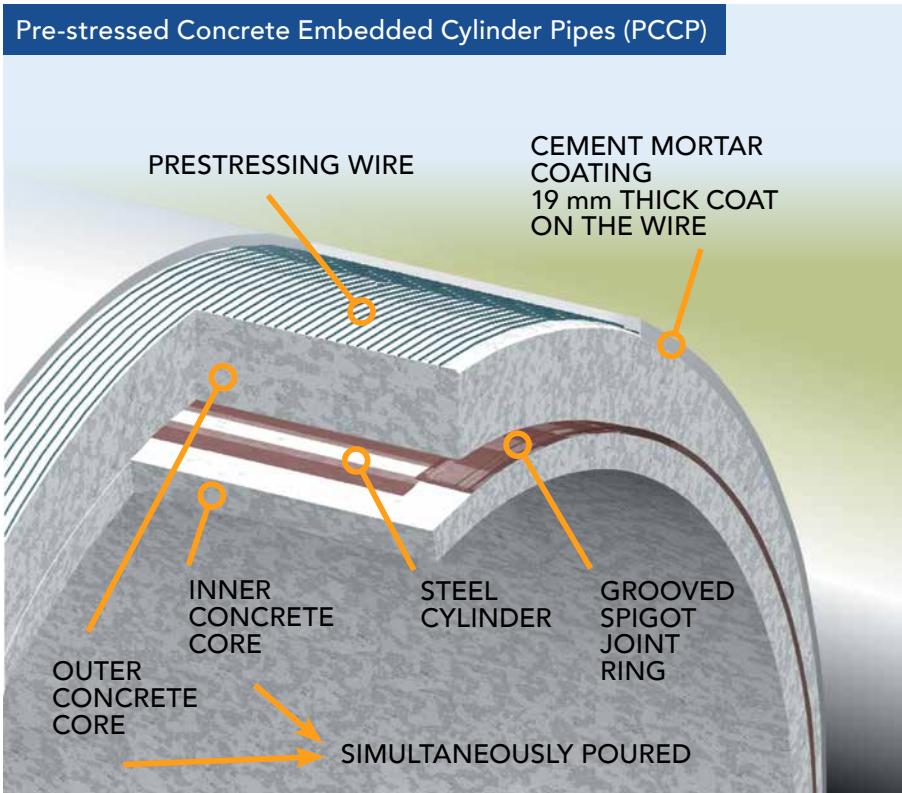
Pressure Pipes	Pre-stressed Concrete Cylinder Pipe (PCCP)	Pre-stressed Concrete Spun Pipe (PCSP)
Normal Nominal Diameters	400 mm up to 4000 mm (15" to 150")	300 mm up to 2800 mm (12" to 110")
Nominal Lengths	up to 8000 mm (26")	5000 mm up to 7000 mm (16" to 21")

PCCP pipe core production area

Automatic Steel Cylinder Welding Machine

Steel Cylinders

Pre-stressed Concrete Embedded Cylinder Pipes (PCCP)



Systems for pre-stressed Steel Cylinder Pipes (PCCP) – mould filling process

Finished Product and Steel Cylinder Storage Area

Core pipe circumferential prestressing

Radial Pre-stressed Concrete Cylinder Pipe

BFS Pre-stressed Concrete Spun Pipes (PCSP)

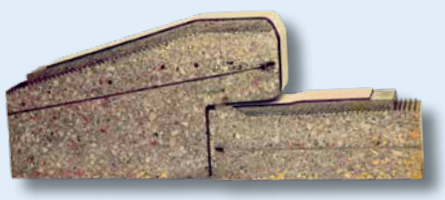
Using BFS Vibro-Press Spinning Technology, BFS pre-stressed concrete spun pipes are trusted worldwide for their high compaction and concrete density achieved, as well as the reliability of the pipelines using concrete joints with single or double rubber ring gasket.

Contact a BFS sales specialist to help design your system - www.afinitas.com

PCSP Pipes: BFS Production Equipment Features:

- Specific design of spun moulds
- Strong and solid mould construction
- High performances of the special BFS spinning machine:
  - 30 m/s (98 ft/s) peripheral speed
  - Hydraulic-movable wheels for covering a wide range of diameters
  - Steam curing and water curing of each pipe
  - Special BFS vibration systems activated during the concrete pouring process to strongly compact concrete especially at the pipe joint area. The spinning machine's compacting roller expertly compacts and creates a smooth pipe inner surface
- BFS circumferential pre-stressing machine is very reliable in maintaining the constant pull and pitch of the steel wire along the entire length of the pipe, guarantees an optimal and uniform resistance to pipeline water pressure.
- MRC machine performs an accurate concrete compacted coating protection of the post compression steel spiral.

Pre-stressed Concrete Spun Pipe Section



Post-compression

Systems for pre-stressed Steel Cylinder Pipes (PCCP) – Mortar Coating Machine; in order to protect the steel wires against corrosion

Spun pipes water curing

Systems for pre-stressed Spun Pipes (PCSP) – Demolding Process of a cured Pre-stressed Concrete Spun Pipe

PCSP pre-stressing wire preparation

Newly manufactured Spun Mould ready for dispatch

Systems for pre-stressed spun pipes (PCSP) –
Layout of a pre-stressed Concrete Spun Pipe Plant

Core pipe circumferential pre-stressing

Concrete Pipe Spinning Machine

Our Service Saves Time and Money

Afinitas brings together the engineering strengths and technical expertise of the trusted HawkeyePedershaab and BFS teams. Our global reach and depth of knowledge assures disruption-free operations and helpful advice on how to achieve optimal, efficient results.

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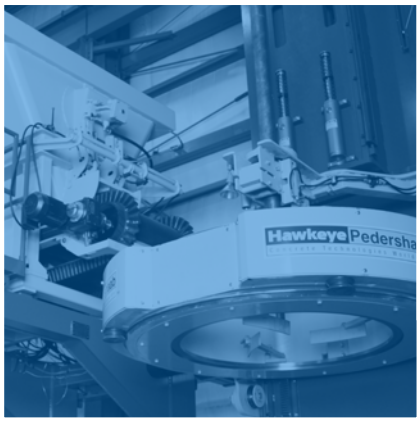
AFINITAS

BFS
High Pressure Concrete Pipe Equipment

Equipment & Automation
BFS | HawkeyePedershaab



Forming Systems
New Hampton | Spillman

Concrete Accessories
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Intelligent Infrastructure Solutions
Visit **www.afinitas.com** to learn more.

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AFINITAS

Intelligent
Infrastructure
Solutions

Afinitas is a global, comprehensive and customer-oriented infrastructure equipment and services platform that brings together the expertise of HawkeyePedershaab, BFS, New Hampton Metal Fabrication, Spillman, and CAM Products.

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