

Custom Trench Drains



**Aquaduct**

*Meeting the requirements of the Clean Air Act*

**Trench Drain Systems for Flue Gas Desulfurization Facilities**



## Flue Gas Desulfurization

Fossil fuels used in electric power generation, such as coal, generally contain high levels of sulfur. When burned, about 95 percent or more of the sulfur is converted to sulfur dioxide (SO<sub>2</sub>). This is then dissipated into the atmosphere via tall flue chimneys - the environmental impact of these emissions led to the introduction of the 1977 Clean Air Act, with amendments made in 1990.

In order to meet the mandates set out in Title IV: Acid Deposition Control, a number of alternatives are available depending upon the power generation facility and availability of alternate low-sulfur fuel.

For applications where low-sulfur fuel is not a cost-effective solution the most common solution is to remove the sulfur dioxide before the waste gases are emitted; this is commonly done through a wet scrubbing process.



The wet scrubbing process utilizes large volumes of water. This generates the requirement for a trench drainage system.

Trench drains are commonly used in the following areas of the scrubbing process:

- Absorber buildings
- Reagent preparation buildings
- Gypsum dewatering buildings
- Further dewatering buildings
- Wastewater buildings





**Benefits of an Aquaduct drainage system**

A custom FRP (fiberglass reinforced plastic) trench drain system offers many advantages over a traditional cast-in-place concrete system.

- **Long, lightweight factory produced channels** - offer ease of installation and handling with a consistent, high quality finish.
- **Overlap joints** - 2" lap joints offer simple and reliable joint sealing.
- **Smoother interior** - FRP offers a much smoother surface than concrete, which promotes better flow velocity and hydraulics.
- **Customizable to fit complex layouts** - dimensional factors such as width, depth, slope, profile and layout are much easier to customize to create the optimum drainage solution.
- **Corrosion resistance** - FRP is produced from glass fibers bonded together using resins and hardeners; each of these can be varied to produce the required chemical resistance. Choice of frame and grate materials to also meet corrosion resistance requirements.
- **Abrasion resistance** - the material from which FRP channels are made is naturally abrasion resistant, and a colored gel-coat may be added to provide visual clues to the unlikely event of damage during use.



When compared to a traditional cast-in-place trench drain with special epoxy coatings an Aquaduct FRP trench drain can offer significant cost and time savings.

An Aquaduct FRP trench drain system not only delivers superior hydraulics, finish and chemical resistance but also offers a faster and simpler installation process. Extensive down times are avoided as additional coatings/processes are not required, and therefore significant time savings are achieved.

**Power Generation Facilities using Aquaduct trench drains:**

- *Tennessee Valley Authority - Paradise, KY*
- *Detroit Edison Company - Monroe MI*
- *Constellation Energy Brandon Shores - Baltimore, MD*
- *Mirant Coal Unloading Pier - Baltimore, MD*
- *Progress Energy Carolinas - Roxboro, NC*
- *First Energy W. H. Sammis Plant - Stratton, OH*
- *South Carolina Electric & Gas - Eastover, SC*
- *South Carolina Electric & Gas - Goose Creek, SC*
- *TXU Oak Grove SES Project - Franklin, TX*
- *WE Energies - Pleasant Plains, WI*
- *Allegheny Energy - Maysville, WV*
- *Suncor Energy - Calgary, AB*



**Dirty water drainage**

Within power generation facilities there are many other applications where FRP trench drains can offer many labor saving benefits and the elimination of the need for a water stop in such applications adds significant time savings. Typical other applications include dirty water applications around boiler rooms and coal delivery areas.

## Other ACO products

### External drainage

#### ACO Sport

Surface drainage and building accessories for track & field.

#### ACO Infrastructure

Surface drainage products engineered for highways, urban roads and bridges.

#### ACO Duct

Linear ducting system with removable solid covers.

#### ACO Environment

Oil water separators and spill containment systems.

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Tunnel and fence system to guide amphibians and other small creatures safely across roads.

#### ACO StormBrixx

A unique and patented plastic geocellular storm water management system.

#### ACO Self

Simple drainage and building components for use around the home, garden and office.

### Building drainage

#### ACO Stainless

Stainless steel trench drains.

#### ACO Floor Drain

Stainless steel floor drains.

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Drainage products for thresholds, balconies, green roofs and building façades.

#### ACO Pipe

Stainless steel push-fit pipe system.

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Shower drainage.

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### ACO, Inc.

#### West Sales Office

825 W. Beechcraft St.  
Casa Grande, AZ 85122  
Tel: (520) 421-9988  
Toll Free: (888) 490-9552  
Fax: (520) 421-9899

#### Northeast Sales Office

9470 Pinecone Drive  
Mentor, OH 44060  
Tel: (440) 639-7230  
Toll Free: (800) 543-4764  
Fax: (440) 639-7235

#### Southeast Sales Office

4211 Pleasant Road  
Fort Mill, SC 29708  
Toll Free: (800) 543-4764  
Fax: (803) 802-1063

#### Electronic Contact:

info@acousa.com  
www.acoaqueduct.us