NCPI
NATIONAL CLAY PIPE INSTITUTE
QUALITY • RESEARCH

TECH NOTES

VITRIFIED CLAY PIPE - THE CHOICE FOR DIFFICULT SOLUTIONS

(Chemical and Thermal Considerations)

PIPE- CHEMICAL RESISTANCE

Clay pipe is well known for its ability to carry a wide range of domestic, commercial and industrial wastes. It is completely immune to attack by sulfuric acid generated by hydrogen sulfide. It is unaffected by the presence of solvents and is widely used in industrial applications.

When clay pipe is vitrified, the clay mineral particles become fused into an inert, chemically stable compound, integrally bonded by its very nature, independent of any artificial bonding agent.

The only known chemicals that may damage Vitrified Clay Pipe are hydrofluoric acid and hot concentrated caustic wastes. The effluent temperature and duration of exposure are important factors.

JOINTS- CHEMICAL RESISTANCE

The joints provided by the manufacturers of clay pipe are designed primarily for use in domestic sanitary sewers. They function extremely well in all common acids and in alkalies up to a ph of 12.

Specialized jointing materials have performed satisfactorily in many industrial applications including the conveyance of organic solvents as well as strong oxidizing mineral and organic acids.

THERMAL SHOCK

Vitrified Clay Pipe can withstand extreme temperatures. However, a rapid change of temperature produces thermal gradients in the pipe wall which may damage the pipe. Proper system design should consider, at least, the following factors: temperature of the effluent, rate of flow, wall thickness of the pipe, temperature of the pipe, temperature of the soil, and the volume of the effluent. The number of variables makes it impossible to predict behavior of the pipe under all conditions.

GENERAL RECOMMENDATIONS

It is generally recommended that cooling towers or retention basins be utilized to dilute and/or modify the effluent temperature prior to discharging into the pipe.

There may be instances where no pipe material is suitable for a particular application. In these situations, experience often dictates the use of Vitrified Clay Pipe because of its generally

effective performance characteristics.

It should also be noted that proposed changes in the effluent composition, discharge temperature or quantity of flow in an existing line may require a performance reassessment.

Due to the wide variety of potential chemical applications, the following Vitrified Clay Pipe manufacturers may be contacted for samples of pipe and joint materials for evaluation by the user.

BUILDING PRODUCTS CO.

Phoenix, AZ 85005

Phone: 602/269-8314

buildingproductscompany.com

GLADDING MC BEAN

Lincoln, CA 95648

Phone: 916/645-3341

gladdingmcbean.com

THE LOGAN CLAY PRODUCTS CO.

Logan, OH 43138

Phone: 800/848-2141

loganclay@loganclaypipe.com

loganclaypipe.com

MISSION CLAY PRODUCTS

Corona, CA 91718

Phone: 909/277-4600

missionclay.com

NO-DIG PIPE

Logan, OH 43138

Phone: 800-848-2141

no-digpipe.com