

FLUE GAS DESULFURIZATION (FGD)



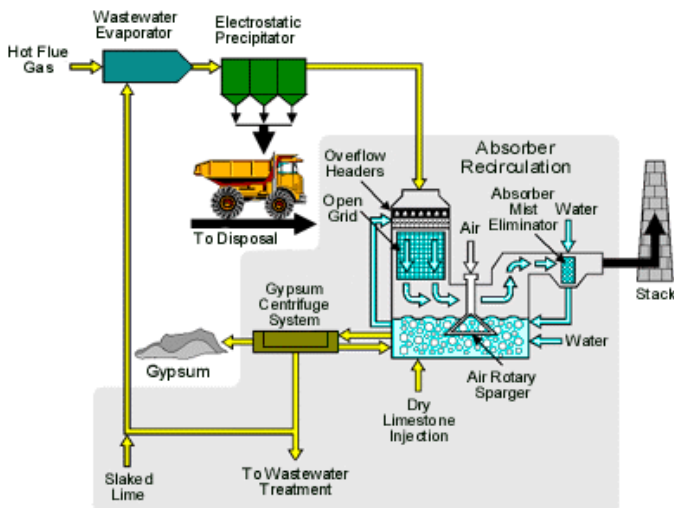
Rubber lined pipe is used to transport abrasive slurry solutions, corrosive chemicals and many other liquids from one place to another. There are many material options that are capable of meeting overall pipe design criteria. Making an economic analysis of acceptable candidates based only upon material costs poses a very real danger. Well over half of the true required investment for a piping system (i.e. the in-place cost of the system) includes material, fabrication and installation costs as well as life-cycle considerations. Rubber lined carbon steel pipe is very cost effective when compared to other material selections:

INSTALLED COST COMPARISONS

Carbon Steel (Sch. 40)	1.00	Glass-lined Carbon Steel (Sch. 40)	2.69
Rubber-lined Carbon Steel (Sch. 40)	1.16	PTFE-lined Carbon Steel (Sch. 40)	2.94
304L Stainless Steel (Sch. 40)	1.31	FEP-lined Carbon Steel (Sch. 40)	2.99
316L Stainless Steel (Sch. 40)	1.45	Monel (Sch. 40)	3.24
FRP/vinyl ester	1.78	Alloy 20 (Sch. 40)	3.32
FRP/epoxy	1.86	Hasteloy C-276 (Sch. 40)	4.46
FRP/polyester	1.86	Nickel (Sch. 40)	4.27
Polypropylene-lined Carbon Steel (Sch. 40)	1.90	Hasteloy B (Sch. 40)	5.71
PVDF-lined Carbon Steel (Sch. 40)	2.47	Zirconium (Sch. 40)	7.04

We can install rubber lining in pipe as small as 1½" dia. and as large as 144" dia. We vulcanize (cure) the lining installed in pipe up to 88" diameter in our autoclaves. Curing in an autoclave produces superior adhesion properties over other processes (i.e. atmospheric and internal steam). Autoclave curing also maximizes the lining life in the pipe versus other methods.

We can apply rubber lining over many different pipe substrates including: carbon steel, aluminum, copper, brass, cast iron, stainless steel & fiberglass. We can fabricate and rubber line your pipe with a minimum lead-time. All rubber lined pipe orders receive the same attention, whether it's a large order, or a single piece.



This is a schematic showing a typical limestone Flue gas Desulfurization process. A by-product of this method of FGD is Gypsum which is used in the manufacturing of Dry-Wall board.

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Some of the Power Plants we have Provided Rubber Lining Products

Facility	Location	Type of Product
AEP - Conesville	Conesville, OH	Rubber Lined Pipe for FGD
AEP - Ghent	Ghent, KY	Rubber Lined Pipe for FGD
AEP - John Amos	Winfield, WV	Rubber Lined Pipe for FGD
Ameren - Duck Creek	Canton, IL	Rubber Lined Pipe for FGD
Ameren - Portage de Sioux	St Charles, MO	Rubber Lined Pipe for FGD
Cinergy - Cayuga	Plainfield, IN	Rubber Lined Pipe for FGD
CIPSCO - Coffeen	Coffeen, IL	Rubber Lined Pipe for FGD
CPS Energy	San Antonio, TX	Rubber Lined Pipe for FGD
CWPL - Dallman	Springfield, IL	Rubber Lined Pipe for FGD
Detroit Edison - Monroe	Monroe, MI	Rubber Lined Pipe for FGD
Duke Energy - Gibson	Mount Carmel, IN	Rubber Lined Pipe for FGD
Duke Energy - Miami Fort	North Bend, OH	Rubber Lined Pipe for FGD
EKP - Spurlock	Maysville, KY	Rubber Lined Pipe for FGD
Hadjret Ennous	Hadjret, Algeria	Rubber Lined Pipe for Seawater
Hoosier Energy REC	Merom, IN	Rubber Lined Pipe for FGD
IKEC - Clifty Creek	Madison, IN	Rubber Lined Pipe for FGD
Indianapolis Power & Light	Indianapolis, IN	Rubber Lined Pipe for FGD
KU - E.W. Brown	Harrodsburg, KY	Rubber Lined Pipe for FGD
Michigan South Central	Litchfield, MI	Rubber Lined Tanks for Slurry
Midwest Generation	Joliet, IL	Rubber Lined Pipe for FGD
NIPSCO - Bailly	Chesterton, IN	Rubber Lined Pipe for FGD
NIPSCO - Wheatfield	Wheatfield, IN	Rubber Lined Pipe for Waste Water
OVEC - Kyger Creek	Cheshire, OH	Rubber Lined Pipe for FGD
Santee Cooper - Cross	Pineville, SC	Rubber Lined Pipe for FGD
Santee Cooper - Winyah	Georgetown, SC	Rubber Lined Pipe for FGD
SCE & G - Wateree	Eastover, SC	Rubber Lined Pipe for FGD
SCE & G - Williams	Goose Creek, SC	Rubber Lined Pipe for FGD
Skikda Power Plant	Skikda, Algeria	Rubber Lined Pipe for Seawater
Southwest Power Station	Springfield, MO	Rubber Lined Pipe for FGD
TXU - Oak Grove	Franklin, TX	Rubber Lined Pipe for FGD

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