FLUOROCARBON LININGS

FMS 33

Maintenance and Installation Instructions for Fluorocarbon Plastic Lined Pipework

Maintenance and Installation Instructions for Plastic Lined Pipework

PTFE/PFA

PVDF

Polypropylene

Installation of Plastic lined pipework should be carried out by trained personnel to the guidelines set out in this specification.

The procedures outlined in this specification are additional to those governing the installation of conventional steel pipework. Expansion and contraction are similar to steel. Allowance should be made for the extra weight of flanged joints and cast and fabricated fittings.

Chemical resistance is defined in section one of this catalogue. Conditions not covered by the catalogue should be referred to the Technical department.

Flange Covers should only be removed immediately prior to installation. If removed for inspection purposes, they must be relaxed, using bolting as originally supplied. Failure to do this may result in mechanical damage or flare relaxation.
If pipes are dismantled after service, similar precautions must be taken.

Damage to flare faces may be rectified by abrasion with fine glass paper. Radial marks from the bore to the flare periphery are usually not repairable if deeper than 0.25 mm. Localised damage up to 0.5 mm deep may be rectified by using conformable gasket material such as Goretex type expanded PTFE.

do not remove pipes from service until they have cooled to ambient temperature.

Flange relaxation or retraction may occur if liners are still hot when pipes are dismantled.
Smooth thin metal plates may be used to help re-installation where minor flare relaxation has taken place.

Gaskets are not required between plastic faces. Flares should be protected from hard pipe faces using suitable PTFE or other gasket materials. Gaskets are recommended when lines are dismantled on a regular basis.

Where pipes may be removed for inspection, blanking off, or other reasons, gaskets should be used to minimise the risk of damage to the pipe flare faces.

The following torque tlevels have been found to give leak-free service.

NPS	Torque	PTFE #150	Torque	PTFE #300	Torque	PP/PVDF
	LBS-FT	N-M	LBS-FT	N-M	LBS-FT	N-M
1	10	7.5	15	11	20	15
1.5	15	11	23	17	30	22
2	25	18	40	30	50	37
3	40	30	60	44	80	59
4	30	22	45	33	60	44
6	60	44	90	66	120	89
8	75	55	105	77	150	111
10	70	52	105	77	140	103
12	85	63	130	96	170	125

The above settings may be safely exceeded by up to 50%.

The preferred practice is to use torque wrenches for final torque setti ng. Bolts washers and nuts must be free of rust, damage, and dirt, with lubricated threads.

It is usually necessary to re-tighten flange bolts 24 hours after initial installation, to overcome any stress-relaxation which may have taken place due to creep in the flare materials.

Lined pipework subject to severe thermal cycling may need to have flange bolts re-tightened periodically. If leakage has occurred, loosen all bolts and re-tighten evenly, working diagonally on bolt pairs.

Welding, brazing, soldering and flame-cutting will damage liners, and must be avoided.