

Foam Systems – Acceptable Materials of Construction

**Materials for Use with
Firefighting Foam Concentrates**

Acceptable Materials of Construction for Use with Firefighting Foam Concentrates

Analyses have been performed with AFFF, AR-AFFF and other foam concentrate formulations manufactured by Johnson Controls to assess compatibility with various foam system components. The recommendations in this technical bulletin are based upon both controlled test results and historical, proven field applications. Only the most commonly used construction materials are addressed in this bulletin. Alternative tank, pump, pipe, fittings, and valve materials may be utilized if acceptable to the customer and/or the authority having jurisdiction.

Please consult Johnson Controls Technical Services for specific guidelines concerning concentrate compatibility with other materials of construction or atypical installations.

Recommended Materials

Storage Tanks

Glass Composite – Vinylester Resin (Premium)

Polyethylene – High density cross-linked polyethylene

Stainless Steel – 304 and 316

Carbon Steel – Expansion dome required with concentrate filled to mid-point of dome (Interior coatings are not recommended because of the surface activity of foam concentrates.)

Aluminum – Alloys 3003-H-14 and 6061-T-6 (Only for use with AFFF foam concentrates.)

Pipe Sealants for Threaded Fittings

TEFLON* tape

TEFLON-based anaerobic thread sealants such as PERMABOND* LH050 and SUPER DOPE* by Argo.

Note: Foam concentrates may dissolve other pipe joint compounds (pipe dope).

Concentrate Piping

Brass – Red brass, naval brass

Stainless Steel – 304 and 316

Plastic – Glass composite (green thread), PVC

Carbon Steel A53-A106 – Recommended for AFFF, AR-AFFF and High-Expansion foam concentrates ONLY when piping is flooded. (Not recommended for protein based agents due to corrosiveness and solids content of protein agents.)

NOTICE

Galvanized pipe and fittings must not be used in contact with undiluted concentrate as corrosion will result.

Gaskets

BUNA-N, EPDM*, TEFLON, VITON*, BLUE-GARD Style 3000*

Note: Natural or “red” rubber gaskets must not be used when in contact with undiluted foam concentrates.

Painted Surfaces

Any foam concentrate spilled on painted surfaces should be flushed off with water immediately. The solvents in the concentrate may cause peeling or streaking of the paint.

* TEFLON, PERMABOND, SUPER DOPE, EPDM, VITON, and BLUE-GARD STYLE 3000 are trademarks of their respective owners.