

INSULATION WEATHERPROOF SEALING PROCEDURE

PROJECT 1295

The original Adipic Acid Project (9098) had equipment pieces insulated and stored over twelve (12) months before being placed into service. For various reasons rainwater leaked into the insulation systems, which deteriorated the insulation and corroded the metal jackets. The current project (1295) has similar storage time; however, we are following this procedure to insure quality workmanship and to prevent costly rework.

The major differences between the two systems are as follows:

1. Project 1295 is using calcium silicate insulation instead of unibestos. Calcium silicate insulation has greater resistance to water. Also a mixture of rainwater and calcium silicate will not form as corrosive a salt that will corrode the metal jacket as unibestos.
2. Single and double "Z" laps are being employed on Project 1295 instead of the single laps used on Project 9098. These "Z" laps are orientated to form a water-tight seal even when the equipment is stored in the horizontal position.

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3. Stainless steel bands are being installed on 12" centers; instead of 18" centers as used on the old project. This provides a tighter joint; therefore, the use of sheetmetal screws can be kept to a minimum. The band tags are installed using 1/8" pop rivets instead of sheetmetal screws.
4. Insulation joints are being sealed with a double layer of weatherproof sealant and reinforced with a layer of fiberglass. The old method used one layer of foamseal with no reinforcing. Foster GPM and Foster Elastalor sealants; which are now being used, are better sealants than the old foam seal. Foamseals become brittle and crack after six (6) months of service while the Foster sealants do not.
5. The large, field-erected tanks are sealed at the bottom with a 2" thick foamglass insulation block. This keeps moisture from seeping up through the base.
6. The jacket material presently used is an epoxy-coated, (both sides) 16 mill, aluminum metal, with a paper moisture barrier glued to the inside, employing a waterproof, 3 mill, layer of polyethylene. The old jacket material was not epoxy-coated on the inside and the paper moisture barrier was glued to the inside with a water-soluble glue.
7. Inspections are being made every two (2) weeks to ensure that these joints are tight and the caulking has not cracked on any of the insulated pieces of equipment.

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Outlined below are the procedures to be followed for insulating the three major types of vessels for weather protection.

I. SEALING INSULATION ON SMALL VESSELS (REFER TO FIG. I)

- A. After the insulation block has been installed, joints at the reinforcing bands, etc. are caulked with a layer of white Foster GPM sealant and (Glassfab) reinforcing.
- B. The 3' or 4' wide metal jacket is then installed around the tank in bands. Three sections are required to make up a complete band. The first section installed is one with "Z" laps on both ends. This section is orientated on the tank; as to provide a water-tight seal. The next section is installed with a single "Z" lap. The last section is installed with open ends. Small stainless steel bands are then installed on 12" centers. This procedure is repeated until the entire tank is covered.
- C. The joints are then caulked a second time with Foster Elastalor Sealant #9544.
- D. The tank insulation is then inspected every two (2) weeks.

II. SEALING INSULATION ON FIELD-ERECTED TANKS (REFER TO FIG. II)

- A. A 2" thick foamglass block is installed around the tank base to prevent moisture from seeping up into the calcium silicate block.
- B. After the block has been installed the metal jacket is then installed in bands around the tank.

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- B. (continued)
Four sections are required to complete a band around the tank. Two sections with "Z" laps on both ends are installed 180° apart, and two sections with open ends are fitted between the "Z" laps.
- C. The insulation and inspection are the same as outlined in Procedure I.

III. SEALING INSULATION ON COLUMNS (REFER TO FIG. III)

- A. The jacket is installed on the columns in the same manner as outlined in Procedure I.
- B. Sealing around the "T"-shaped stiffening rings is different. On top of the stiffening ring, block insulation is installed to completely fill the void between the ring and the column plate. This area is then caulked with Foster GPM sealant and with glassfab reinforcing. The metal jacket is then installed over and around the flange on stiffening ring. (Refer to Sketch III for details). The joints are then caulked again with the Foster Elastalor Sealant. Underneath the stiffening rings the insulation is sealed in the same manner as outlined in Procedure I.
- C. The columns are then inspected every two (2) weeks.

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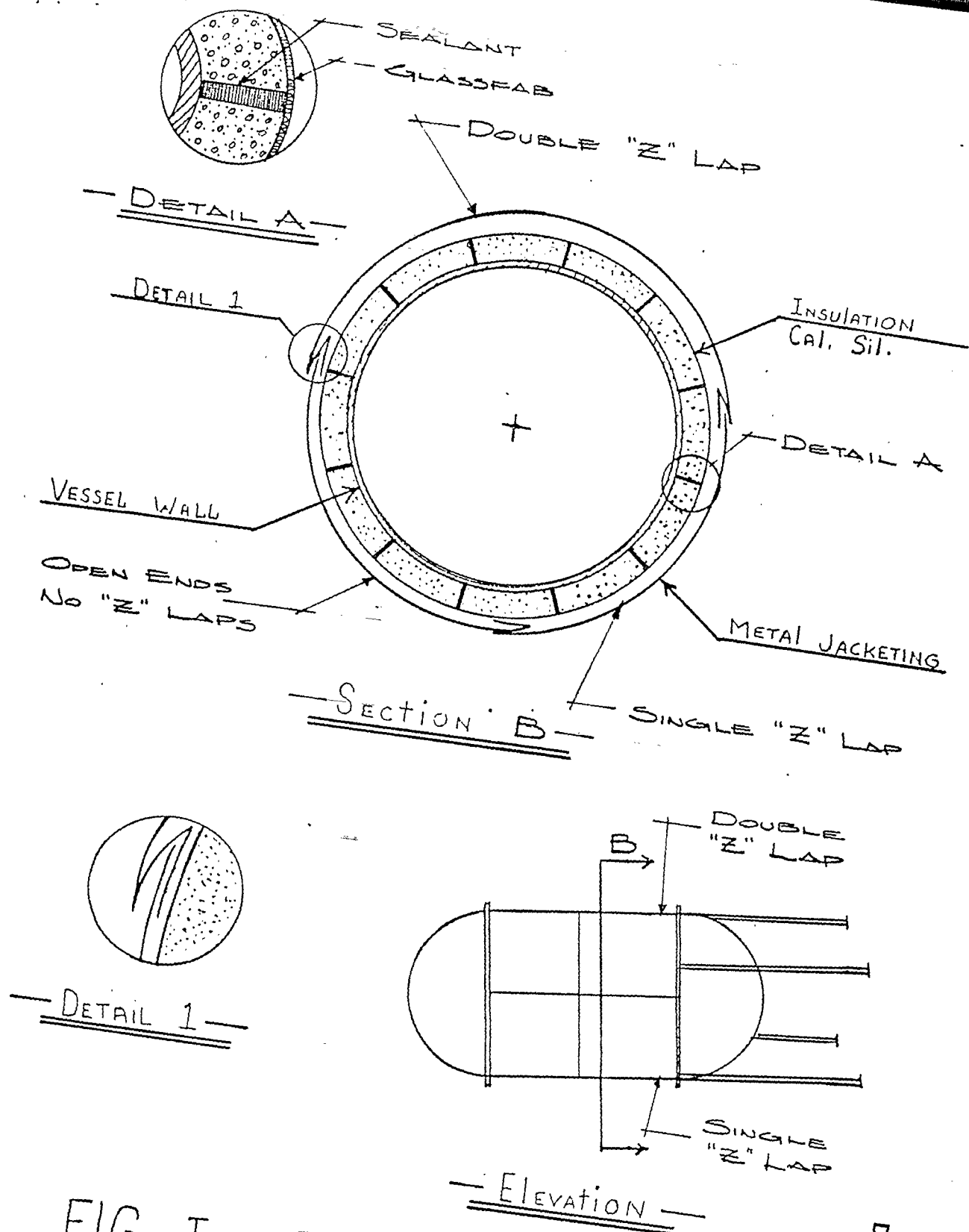
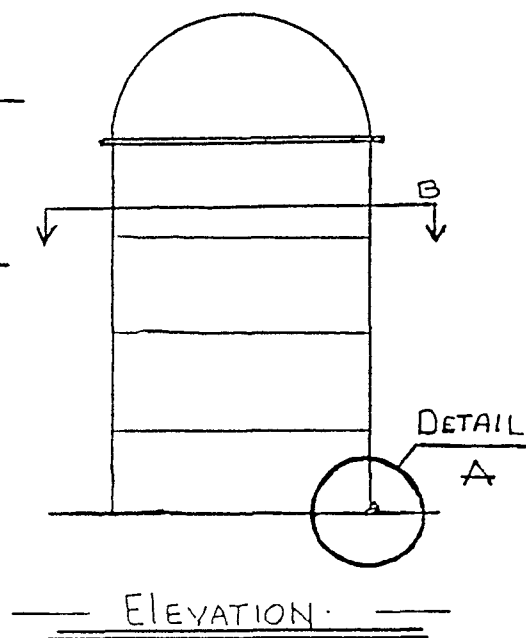
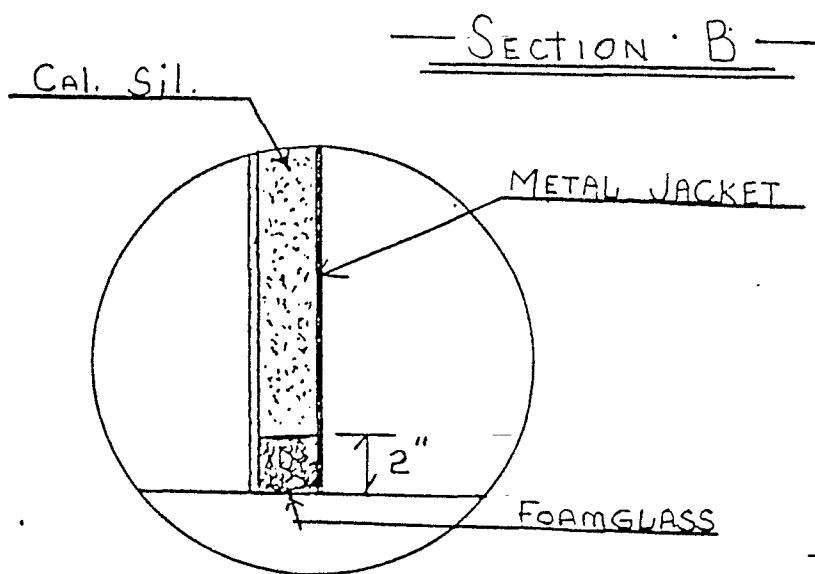
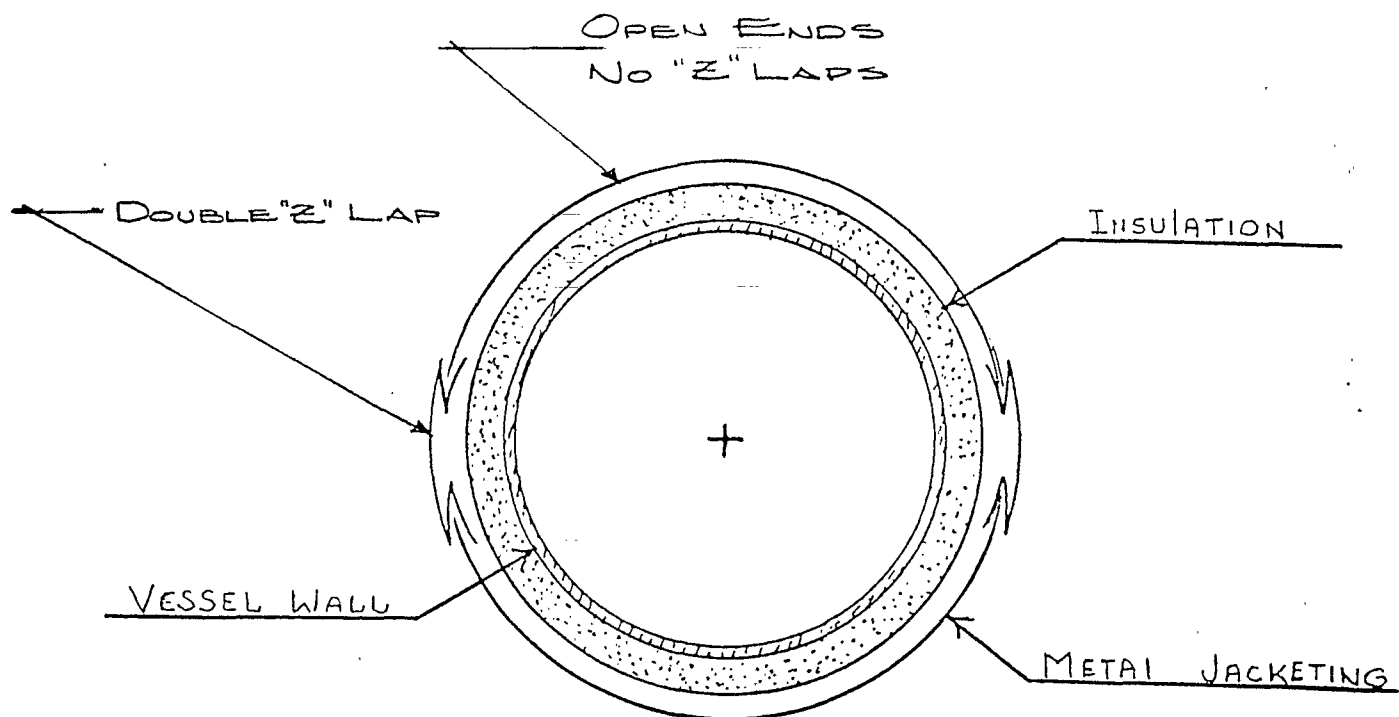


FIG. I - PRE-INSUL.-VESSEL
LAYING DOWN

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DETAIL A

FIG II - LARGE VERTICAL TANK

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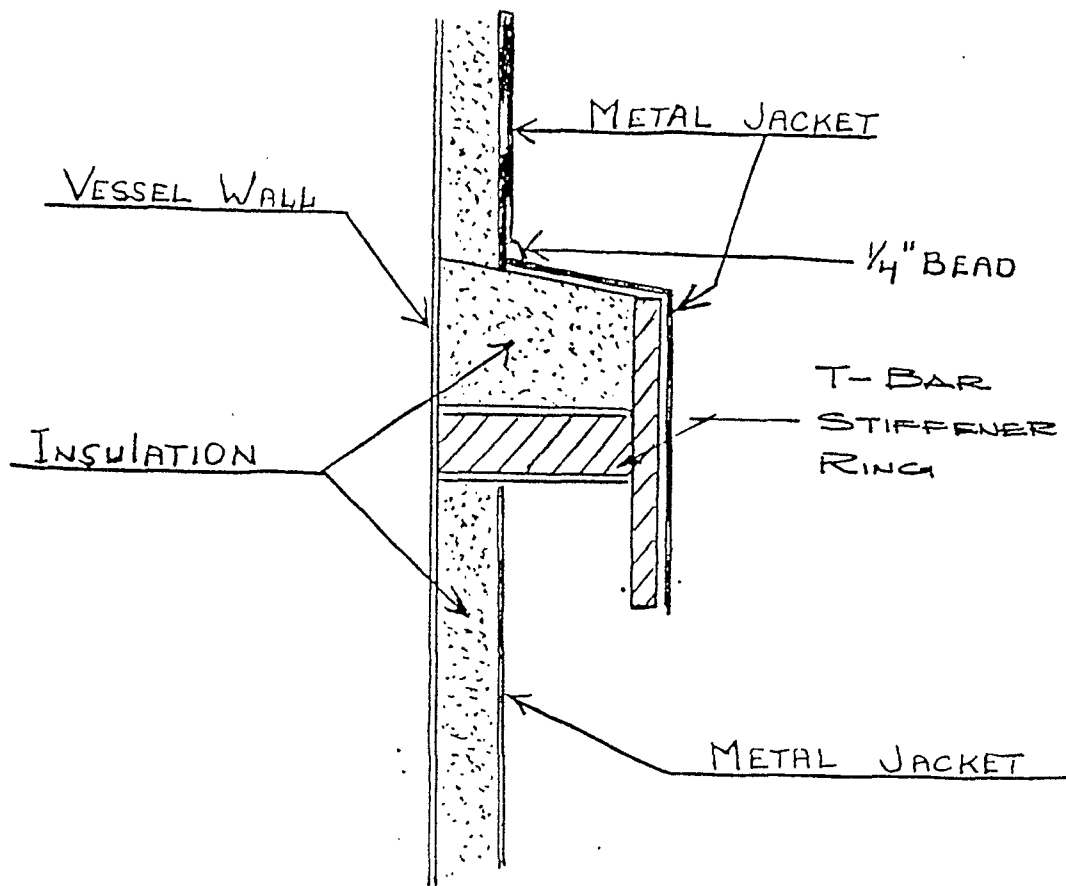


FIG. III - T-BAR STIFFENER
RING

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