

# INDUSTRIAL USE OF WELDED SANITARY PIPELINES<sup>1</sup> —

## EXPERIENCES AT SEALTEST FOODS

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Welded CIP sanitary lines have been used in milk and ice cream plants in rather a limited way in this country for nearly 10 years. During the past two years interest in this method of joining sanitary stainless steel tubing has become quite popular, especially in new or remodeled plants. A number of Health Departments have cooperated and many have seen the advantages in having two pieces of stainless tubing fused together by heat instead of having gasketed fittings which are more likely to cause contamination, are more expensive, require more attention and need occasional gasket changes.

Pertinent facts concerning installation of welded cleaned in place sanitary lines are as follows:

1. They are cheaper and much easier to install than with fittings.

2. Whether or not welding is done by hand heli-arc torch or by automatic means, it must be done by an expert mechanic trained in one of these methods. Without sufficient training and experience the welds are likely to show too much of a raised bead or pits or crevices on the inside. This will defeat the purpose of welding.

3. A plan must be made of what is desired to be done. The job must be studied by all interested parties and then engineered to completion.

4. Prior to the time of welding, it is good practice to install pipe supports and lay the pipe on them, being sure that the ends of the pipe are cut straight and are free from burrs and metal filings. When laid in place the ends of the tubing may be taped (with masking tape.) Sufficient pitch of the lines should be planned to give good drainage. Whenever possible 20-ft lengths of pipe should be used to cut down the number of welds. By this planning and by laying the pipe in place, welding will be facilitated, permitting as many as 25 to 35 welds in an 8-hour day. Prefabricating of header lines in front of storage tanks is often advisable.

5. Depending upon the layout of equipment, it is possible to weld as much as 60% to 70% of the sanitary lines in an ordinary milk or ice cream plant.

6. Many installations have elbows and valves welded into the lines. Swab tests may be taken at the valves, when plugs are removed.

7. One method of inspecting the inside of the sanitary lines for cleanliness is to remove two plugs from welded-in valves and run a plastic coated "fish tape" (or "pipe snake") from one valve housing to another. To this is attached a rubber plug, (or stopper) covered with a swab and of the same inside diameter as the pipe. This is then pulled back through the line. The cleanliness of the swab will indicate the sanitary aspects of the pipe. On cold product lines using a first rinse at 125°F for 3 to 5 minutes, followed by an alkaline solution (0.1-0.15%) for 20 minutes at 125° to 140°F, and a final rinse at 125°F for 3 to 5 minutes, all at a minimum flow rate of 5 feet per second, should insure a clean swab at all times. As an extra precaution, some people believe in running an acid solution through the lines once monthly. However, in cold lines, the need for this has not as yet been proved. For hot product lines temperatures, strength of solutions and circulation times should be increased according to the needs. Daily use of an acid solution is advisable in these hot lines.

Advantages and results obtained in the use of welded CIP lines are as follows:

1. Cleaning of all CIP surfaces are positive.

2. The human element in cleaning is eliminated, which, among other things, permits use of stronger alkalis.

3. There is no danger of contamination of product from leaky gaskets, often caused by strains at the fittings due to improper supporting.

4. By never having to take sections of lines down, maintenance and replacement of fittings and gaskets are eliminated.

5. From 50% to as much as 75% of equipment cleaning labor may be saved.

6. Product losses, due to leaky fittings, is eliminated.

7. Working conditions are greatly improved which enables management to hold a higher type employee on this all-important sanitation work.

8. Welded CIP lines have helped provide consistently lower bacterial counts on finished products and coliform contamination from lines is eliminated.

9. Shelf life of products has been extended.

After two years experience with welded CIP sani-

<sup>1</sup>Second in a series of papers given in a panel discussion on "Industrial Uses of Welded Pipelines," presented at the 47th Annual Meeting of the INTERNATIONAL ASSOCIATION OF MILK AND FOOD SANITARIANS, INC., October 26-29, 1960 at Chicago, Illinois.

tary lines in different locations and with different conditions, we have found no ill effects, when the system is properly engineered and installed. Coliform counts from lines consistently are zero and standard plate counts on finished products average less than 5,000 per ml.

## NEWS AND EVENTS



Wanderer Resort Motel, headquarters for the 48th annual meeting, Jekyll Island, Georgia

### IAMFS GOLDEN ANNIVERSARY MEETING TO BE HELD AT JEKYLL ISLAND GEORGIA IN AUGUST

For several months the front cover of the Journal has carried a reminder to all members that this year's annual meeting will be held at Jekyll Island, Georgia, August 14-17. This is no idle reminder. Mark your calendar now and make your plans. Right in the middle of vacation time, bring the family for this is a spot you will want to visit.

Making the event doubly important is the fact that this is our Golden Anniversary. International is 50 years old this year. Come and help celebrate fifty years of leadership and progress.

Jekyll Island is a garden spot. It is a romantic island unspoiled by man . . . sun bathed surf sweeps over the world's finest beaches . . . refreshing breezes sweep beneath moss covered oaks . . . yes, here nature has bestowed man with a fabulous spot for your

pleasure. Bathing, fishing, golf, cook outs are yours on Jekyll. While you are at the meetings, your family can be enjoying fun at the ocean and on the beautiful sandy beaches.

Headquarters will be the beautiful Wanderer Resort Motel. (See accompanying picture) Jekyll is easy to reach. By car it is easily reached by Georgia's federally designated highways connecting with Georgia Highway No. 50 at Brunswick. By air both Delta and Eastern have service to Brunswick. Rail connections are available by Southern, Atlantic Coast Line, and Seaboard Railways.

Its time right now to make your plans and get your reservations. The Georgia affiliate, our host, extend a cordial invitation, so plan now to come.