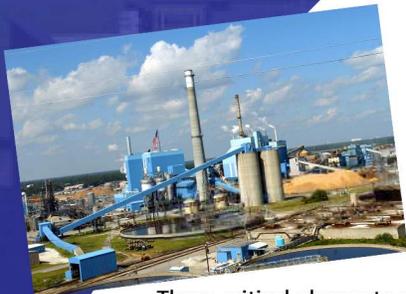




# Kapstone Pipe Insulation Project

High-pressure steam piping project requires custom insulation under tight deadline



### Project Description

High pressure steam and heat are key components to producing the finest kraft paper and linerboard. The Kapstone plant located in Roanoke Rapids, North Carolina has been doing this for many years. The management decided that they needed to increase production at this facility. Installing additional steam piping would be required to meet the new demand. The new line would be over 500 lineal feet of 16 inch diameter steel piping carrying 800 lbs of pressure and operating at 850 degrees F. The correct insulation type installed by an experienced contractor is critical. Waco has been providing contracting services to this facility for over 30 years and was the clear choice for this difficult project.

Three critical elements of this insulation project were:

1. Provide safety to employees working around this piping system
2. Maintain the proper heat within the pipe system and deliver the appropriate supply of steam to each required area
3. Conserve energy and reduce the overall operating costs.

The specification required a double layer of four (4) inch thick Calcium Silicate insulation with stainless steel metal jacketing. All the long radius sweeping elbows for both the insulation and the SS metal had to be custom designed by Waco's fabricators. The expertise required to correctly make and install these fittings is what separates the quality industrial contractors from standard insulators. In addition, much of this insulation would be installed on piping that would be located over 40 ft up in the air and had to be installed during a 1 week shutdown. Coordinating with the mechanical contractor and Kapstone was paramount to a successful project.

To add to the complexity, during the project the plant identified an additional 400 lineal feet of 4 inch piping that required 3 inch thick insulation. This additional insulation work had to be completed within the original project deadline.

### Unique Project Challenges

- 1 The installation team had to relocate itself throughout the plant several times during the week due to Quality Control testing. If QC weld testing on the new pipes failed at a certain location, the Waco insulation team had to move to a section in which QC testing was successful. This created unique challenges to keeping the project on schedule.
- 2 The completion schedule was tight from the beginning and when the additional 400 feet of insulation work was added to the project, the Waco team had to get creative in order to meet the original project deadline. This required longer work days, additional manpower pulled from other Waco office locations, and implementing staggered shifts of two insulation teams.
- 3 Beyond insulation skills, the project required some complex scaffold construction, removal of the fire barrier between floors of the plant, and a variety of other tasks and skills.

### Project Scale

- 500 lineal feet of 16 x 2 and 20 x 4 insulation
- 400 lineal feet of 4 x 1.5 and 7 x 1.5 insulation

### Summary of Results

James Baldwin was the Project Manager. The Waco team was able to complete the project on time and under budget, due to precise project scheduling and preparation done ahead of the plant shutdown week. Several other contractors went over budget due to changes. There were no workplace injuries. Waco's performance further solidified our relationship with Kapstone.

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