

1 Procedure

Reels of Flexpipe spoolable products may require heating in certain situations as defined by the Flexpipe Installation Guide, the Flexpipe bulletin for Cold Temperature Operating and Hydrotesting of Flexpipe Spoolable Products, and instructions from Flexpipe representatives.

The following heating procedure is recommended:

1. Enclose the reel within a structure of tarps, ideally insulated. The greater the insulating layer the less time the pipe will take to heat. Creating space between the insulating structure and the pipe will allow for more uniform heating of the outer wrap. Tarping in 2 or 3 reels together will create more air space which will promote even heating.
2. Heat the enclosed space with portable heaters of sufficient size, generally 400,000-500,000 btu (see recommended setup in Figure 1). Care must be taken to ensure that heat is not applied directly to the surface of the pipe and that no portion of the pipe exceeds 60°C at any point during the heating process. It is critical to monitor pipe surface temperature throughout the heating procedure and ensure that precautions are taken to ensure that the enclosure does not ignite.
3. Monitor the temperature of pipe with a suitable surface temperature measurement device until the required pipe temperature is achieved throughout the reel. Monitor the pipe temperature in several locations and heights: both sides of the reel, the outer wraps, and the inner wraps.
4. Document the process of heating the reel: date and time, ambient conditions, pipe run number, air stream temperature, and log the times and temperatures of the monitoring as the pipe warms (see Appendix A for a sample report).
5. The pipe may be colder than the air temperature within the tarp enclosure and the temperature of the pipe may vary due to location on the reel. Assume that the temperature in the middle of the pipe wraps is the same as the coldest ambient temperature recorded during the preceding 48 hrs. As an example, if the daytime temperatures are -25°C but overnight temperature is -35°C, assume that the most insulated layers of the reel will be at -35°C prior to beginning the heating process. Wind speed also has a significant effect on heating time and effectiveness.
6. Once heating has begun, it is recommended to heat all measurable surfaces to above 0°C.

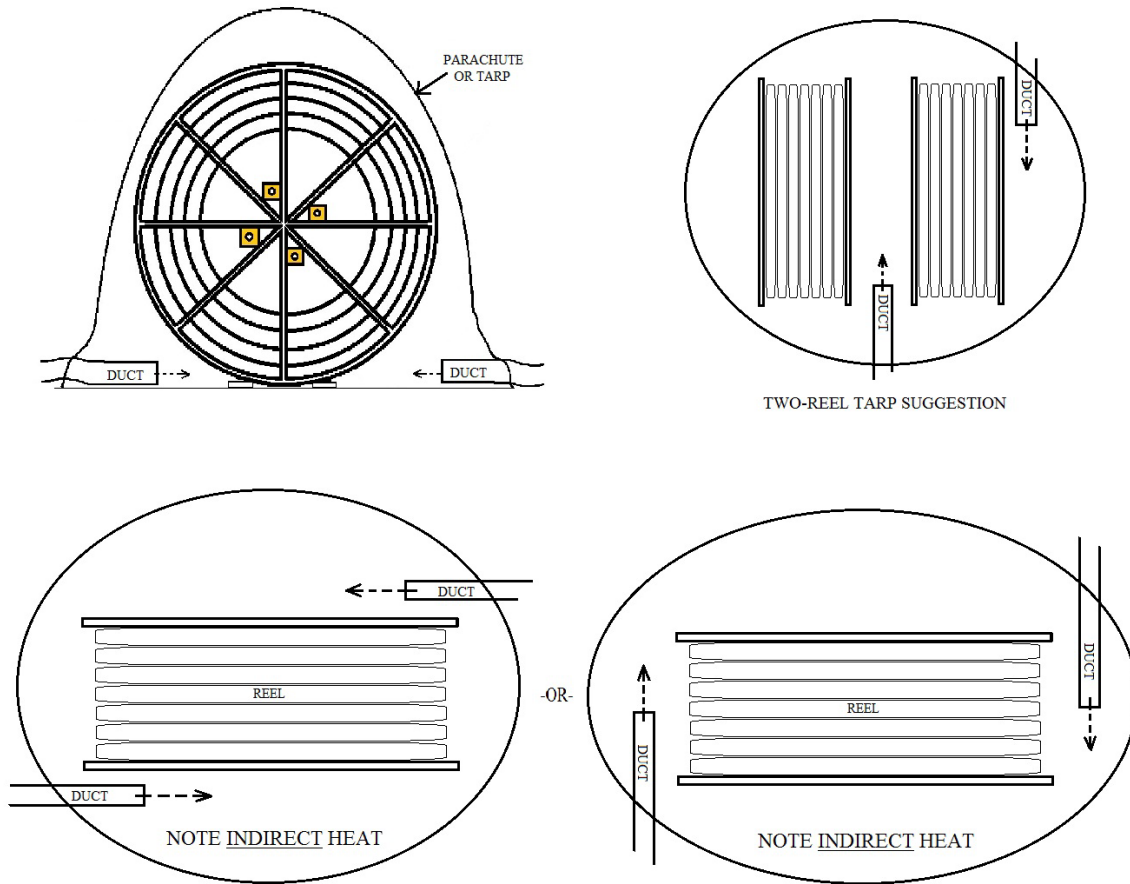


Figure 1: Recommended Tarp Setups for Heating

2 Recommended Heating Setup

The intent of this procedure is to heat the entire reel of pipe evenly. Therefore, the enclosure and heaters should be arranged to achieve optimum circulation of heated air inside the enclosure.

If using a parachute with a hole in the center, arrange the hole roughly at the top center of the enclosure. Place one heater exhaust to blow along one side and under the reel (not close enough to overheat the pipe), with a second exhaust on the opposite side of the reel, to promote air circulation. Care must be taken to ensure that the exhaust is not placed too close to the pipe. Heaters may need to be moved during the heating process to ensure even warming. Failure to evenly heat pipe throughout the reel may result in significant temperature differences within a single wrap of pipe. This can cause variances in pipe stiffness throughout the reel, potentially resulting in kinking.

