

General Guidelines For Squeezing Off Polyethylene Pipe in Water, Oil and Gas Applications

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Foreword

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1.0 INTRODUCTION

Squeeze-off is a technique used to control the flow of fluids including oil, dry or wet gas, multiphase fluids, non-potable oilfield water or potable water in polyethylene pipe by compressing the pipe between parallel bars until the inside surfaces make contact. The flexibility and toughness of polyethylene pipes allow the pipe to recover from a properly made squeeze-off without a measurable loss in service life. When properly performed, the operator can obtain a complete flow shut-off. Squeeze-off can be useful for making installation tie-ins, performing maintenance to system components, as well as for emergency repairs.

2.0 OPERATOR EXPERIENCE

Squeeze-off should only be performed by persons that have received training from an authorized instructor and that have a strong working knowledge of polyethylene and squeeze-off procedures. The operator should have training on the size of equipment being used to perform the squeeze-off. This document is a guide only, and should not be used in place of training by an authorized squeeze-off instructor. Failure to follow proper procedures can result in pipe failure or leakage due to compressively over strained pipe from improper squeeze-off. If following manufacturers procedures, ensure that the tool/procedure were qualified using ASTM F1734 Standard Practice for Qualification of a Combination of Squeeze Tool, Pipe, and Squeeze-Off Procedures to Avoid Long Term Damage.

3.0 GUIDELINES FOR SQUEEZE-OFF OF PE PIPES

Tool Location – Center the squeeze-off tool squarely on the pipe. This will allow the pipe to flatten freely without coming in contact with the tool frame or abutments. Locate the squeeze-off tool a minimum distance of 3x the pipe diameter, or 12 inches, whichever is greater, from any fusion joint, mechanical connection, prior squeeze-off point, or second squeeze-off tool.

Tool Operation – Operate the squeeze-off tool at a rate slow enough to allow stress relaxation in the pipe to occur. ASTM F1041 Standard Guide for Squeeze-Off of Polyolefin Pressure Pipe and Tubing recommends a maximum compression rate of 2 inch per minute or less is appropriate. See Table 1 for example squeeze times. This slow rate is particularly helpful when pipe becomes stiff in cold weather. Squeeze the pipe until flow ceases or the mechanical stop is contacted, whichever comes first. Continuing to operate the squeeze-off tool beyond this point can cause pipe or tool damage.