



GRA SERVICES INTERNATIONAL

5000 East 2nd Street • Edmond, Oklahoma 73034-7545 (405) 330-2395 • Fax (405) 330-1397 • info@graservices.com

Pull-Out Testing – 2” through 4” HDPE Pipe PE Fusion™ Pull-Out Tests Results without PE Scraping Tool

Gentlemen,

PE Fusion™ was tested at Standard Testing Laboratories in Oklahoma City to determine the bonding strength for the joining of two end sections of High Density Polyethylene Pipe with a standard PVC coupling. Test equipment was a Tinius Olsen Super L Universal Testing Machine, (Tensile Tester). Test specimens varied from 2” to 4” diameter polyethylene pipe. Control values were established by using maximum rated pull-out strength for the standard mechanical coupling used extensively in the PE pipe industry. Test summaries are listed below. Pipe samples were prepared using a small scuff pad and were allowed to cure for 24 hours.

Pipe Size*		Mechanical Coupling		PE Fusion™
		Smooth Pipe Load, lbs.	Grooved Pipe Load, lbs.	Scraped Pipe Load, lbs.
2”	Test #1	175	350	1,964
	Test #2			1,437
	Test #3			2,116
	Test #4			2,250
	Test #5			2,291
	Test #6**			1,927
3”	Test #1	290	520	2,586
	Test #2			5,581
	Test #3			5,493
	Test #4			2,150
	Test #5			4,974
4”	Test #1	350	650	3,303
	Test #2			1,993
	Test #3			1,885
	Test #4			5,880
	Test #5			3,382

*** IN ALL TESTS, THERE WERE NO ADHESIVE FAILURES, ALL FAILURES OCCURRED IN THE COUPLINGS.**

** Prior to testing, sample #6 was subjected to impact testing with a 12# sledgehammer. Sample was struck twice, once on either side of the coupling.