

## SAND CONTROL PRODUCTS

# Perforated Tubing and Casing

## Description

Variperm's perforated liner systems are a proficient and cost effective way to establish communication between the reservoir and the well bore.

Multi spindle drill presses are used to produce liners which have a standard open area of 3%. Perforations per meter, hole diameter, phasing, and open flow area percentage are adjustable per client specification.

The stress concentration factors introduced into the liner as a result of the perforation process are limited when circular holes are used. As a result the residual stresses caused by the bending and torsional loading which occurs during the installation of the liner are minimized.

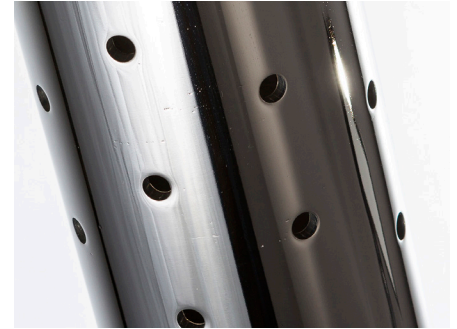
Every perforated casing and tubing joint is put through a comprehensive drifting and deburring process utilizing Variperm's High Pressure Pneumatic Drifting tool which ensures a burr free liner and full I.D. perforations with no restrictions on the I.D. of the liner.

## Features and Benefits

- High open area which provides low pressured drop and velocity across the liner
- Ability to perforate any desired hole pattern, diameter, or phasing
- No cost for wireline or tubing conveyed perforating

## Applications

- Horizontal well bores as standalone systems or combined with swellable packers.
- Horizontal well bores to provide hole consolidation where a cemented liner is not necessary
- Injection Wells



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### Technical Data

Base Pipe		Holes Per foot	Holes Per meter	Hole Size inches	Hole Open Area		Percentage Open Area %
Outer Diameter					sq.in./ft	sq.cm/m	
inches	mm						inches
1.900	48.26	24	78.7	3/8	2.65	56.1	3.701
2.375	60.33	30	98.4	3/8	3.31	70.1	3.701
2.875	73.03	18	59.1	1/2	3.53	74.8	3.261
3.500	88.90	24	78.7	1/2	4.71	99.7	3.571
4.000	101.60	24	78.7	1/2	4.71	99.7	3.125
4.500	114.30	30	98.4	1/2	5.89	124.7	3.472
5.000	127.00	36	118.1	1/2	7.07	149.6	3.750
5.500	139.70	36	118.1	1/2	7.07	149.6	3.409
6.625	168.28	42	137.8	1/2	8.25	174.6	3.302
7.000	177.80	42	137.8	1/2	8.25	174.6	3.125
7.625	193.68	48	157.5	1/2	9.42	199.5	3.279
8.625	219.08	54	177.2	1/2	10.60	224.4	3.261
9.625	244.48	60	196.9	1/2	11.78	249.4	3.247
10.750	273.05	66	216.5	1/2	12.96	274.3	3.198