

## OptiPac

### Alternate Path openhole gravel-pack screens

#### APPLICATIONS

- Openhole vertical and horizontal wells
- Long intervals
- Heterogeneous formations
- Extended-reach wells and extreme-reservoir-contact wells
- Low-fracture-gradient formations
- High-rate producer and injector wells

#### ADVANTAGES

- Promotes high-efficiency gravel packs, thereby increasing operational reliability and extending completion longevity
- Allows gravel packing in longer intervals previously considered impossible
- Minimizes rig time spent on sand control pumping operations
- Provides economical means to complete marginal hydrocarbon zones
- Allows higher sand concentrations, reducing pumping time
- Prolongs well life
- Maximizes production and reservoir recovery

#### FEATURES

- Is available with direct wire-wrapped, wire-wrapped, and premium sintered mesh screens
- Minimizes screen plugging
- Aligns Alternate Path<sup>†</sup> gravel-pack shunt tubes automatically while connection is being made
- Allows sand bridges to be bypassed around the screen during pumping operations

The OptiPac<sup>®</sup> Alternate Path openhole gravel-pack screen is designed to minimize sand control failures and overcome the challenges of gravel packing in openhole vertical and horizontal wellbores.

In this type of well, problems are often encountered with silt and shale sloughing, premature bridging from high leakoff, filtercake cleanup, and difficulty regaining permeability. Gravel packing is often inefficient or incomplete, exposing long intervals of screen to erosion and plugging and preventing full annular packs. Typical problems that can result are premature screenout, erosion hot spots, hardware damage, and consequent completion failure.

#### Technology allows complete packs

The OptiPac Alternate Path screen provides a redundant mechanism with shunt tubes and nozzles that allows slurry to bypass sand bridges and fill in voids that can occur during gravel packing, preventing the problems mentioned. The result is complete annular packs, longer completion life, and better production and recovery.

#### Tubes divert slurry to voids

OptiPac Alternate Path screens are designed with transport tubes along the screen that move the slurry from joint to joint. Each joint has two packing tubes that tie into transport tubes at the top of the joint via a manifold and are automatically aligned during assembly. Evenly placed nozzles along the packing tubes divert slurry to the open hole between the screen and wellbore when bridges form, allowing the empty spaces in the unpacked

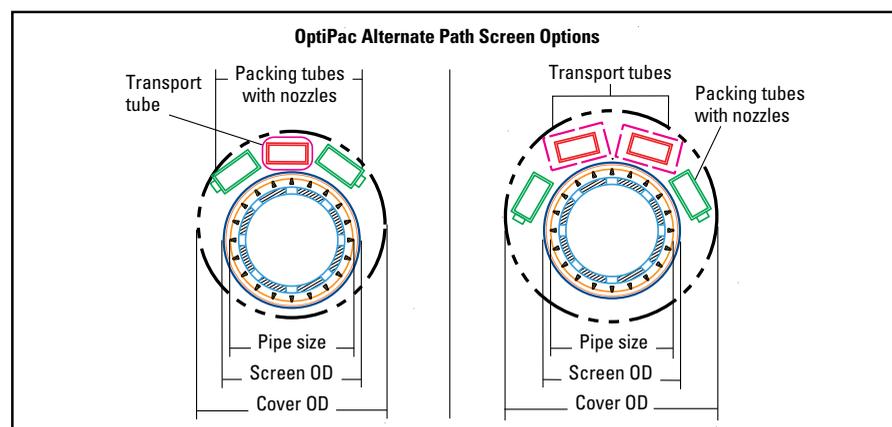
annulus to be filled. This process continues until the interval is fully packed.

#### Longer intervals can be packed

OptiPac Alternate Path screens are used with specially developed nondamaging carrier fluids, state-of-the-art modeling software, and customized pumping designs. The screen's outer shroud provides standoff to protect the screen and tubes. OptiPac Alternate Path screens do not require the use of centralizers though they are available on request. Because of the excellent pack quality this integrated gravel-pack system provides, full annular packs are possible in horizontal intervals as long as 5,000 ft [1,524 m].

#### Assembly options are available

OptiPac Alternate Path screen options are available to suit the characteristics of the reservoir and wellbore to be gravel packed. They are available with the LineSlot<sup>®</sup> direct wire-wrapped screen, WeldSlot<sup>®</sup> slip-on wire-wrapped screen, and MeshSlot XL<sup>®</sup> four-layer premium sintered mesh screen — each with either one or two transport tubes. The number of tubes used is reflected in the naming convention: 1AF × 2AP refers to a screen assembly with one transport tube and two packing tubes; 2AF × 2AP refers to a screen assembly with two transport tubes and two packing tubes. The packing tubes divert slurry to the open hole between the screen and wellbore when bridges form, allowing the empty spaces in the unpacked annulus to be filled. This process continues until the interval is fully packed.



OptiPac Alternate Path screens are available in two configurations (1AF × 2AP and 2AF × 2AP) to suit the characteristics of the reservoir and wellbore to be gravel packed.

# OptiPac Alternate Path

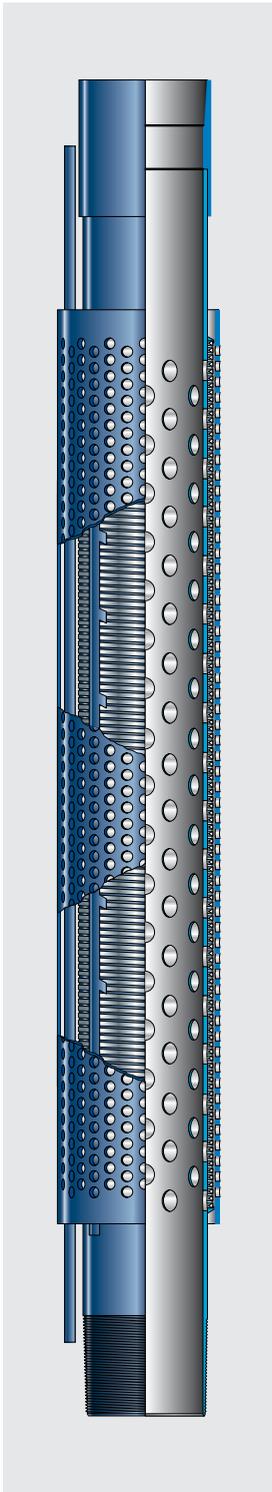
## OptiPac Alternate Path Screen Specifications

Basepipe OD, in	Shroud OD, <sup>‡</sup> in	2 × 2		1 × 2		
		Additional Alternate Path Tube Weight, lbm/ft <sup>†</sup>		Shroud OD, <sup>‡</sup> in	Additional Alternate Path Tube Weight, lbm/ft <sup>†</sup>	
		LineSlot Screen	MeshSlot XL Screen		LineSlot Screen	MeshSlot XL Screen
3.50	6.17	11.80	14.40	5.57	10.10	12.70
4.00	6.33	12.40	15.10	6.29	10.80	13.60
4.50	6.91	13.10	16.20	6.79	11.70	14.90
5.00	7.26	13.70	16.90	7.29	12.30	15.60
5.50	7.73	14.50	17.90	7.79	13.10	16.60
6.63	8.97	16.40	20.50	8.92	15.00	19.20
7.00	9.34	16.80	21.70	9.30	15.50	19.80

<sup>†</sup> For final assembly weight, add basepipe weight to additional Alternate Path tube weight.

<sup>‡</sup> Shroud OD is the same irrespective of filter type.

Note: For rating values, refer to individual screen product sheets.  
ISO certifications are available on request.



OptiPac Alternate Path gravel-pack sand screen.

[slb.com/sandscreens](http://slb.com/sandscreens)