

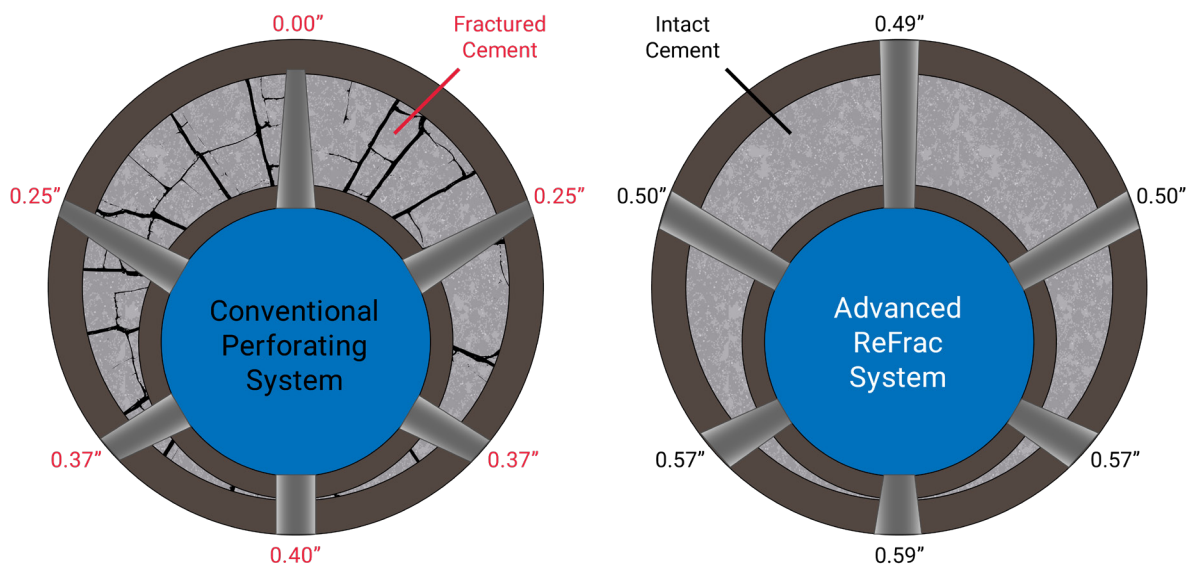
Systems That Deliver Re-Frac Pathways

Re-fracturing is often achieved by cementing a new casing across the previously treated interval and shooting new perforations before pumping the stimulation treatment.

But what happens when you try to shoot through two strings of pipe with a system that was designed to shoot through one?

A conventional system will typically create large entry holes on the low side, but might not make it through the second string on the high side - and if it does make it through, the high side holes will be tiny.

Another, less-discussed issue is that the annular cement is often turned to rubble, creating a pathway for frac fluid and proppant to travel between the inner and outer casing strings instead of into the formation.



Advanced ReFrac™ systems are optimized to create large, effective, burr-free perforations through the outer casing at all phasing angles. The outer casing holes are slightly larger than the ones in the inner string, so they don't constrain fluid flow. And the annular cement is left intact, providing a solid barrier that forces frac fluid into the formation.

The next time you're planning to re-frac through two strings of pipe, specify a perforating system that's been designed and tested for your exact well configuration**

** If you can't find one, pick up the phone and we'll make it happen.