

Interchangeability and sustainability go hand in hand for sand management

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The ability to utilize interchangeable inventory has a major impact on the amount of equipment needed to address multiple projects simultaneously as well as the need for contingency planning. Thereby, minimizing the amount of material used and optimizing logistics.

To contribute to a sustainable future for the oil and gas sector, where efficient use of resources is vital, Tendeka has adopted an “inflow plug and play” approach to sand and inflow control with interchangeable equipment supply and fitting.

The process involves the standardization of equipment whilst still maintaining flexibility in the design. This means that the same chassis can be used for multiple applications and customized immediately prior to installation to optimize reservoir performance. A smart control framework to manage sand production and inflow control will consider the most efficient combination of screen filter size, type, and mechanical rating selection. The benefits of this approach include:

- Improved reservoir performance: flexible “plug and play” approach allows for final sand and inflow control design to be optimized at the rig site based on the latest reservoir and formation evaluation data
- Minimized tooling and machinery adjustments leading to improved manufacturing efficiency
- Minimized waste through repeatability and reliability
- Efficient supply chain and material management by using metallurgy suitable for producers and injectors
- Streamlined screen manufacturing process
- Flexibility due to re-use of raw materials when plans change.

Key to the process is supplying the equipment ready to house multiple solutions. Each joint of sand screen with inflow is supplied with two standard tapped apertures that can be configured to have any combination of valves including autonomous inflow control devices (AICDs), passive ICDs, injection valves, blanking plugs (or even fully open

ports in some cases), that can be changed on site, if need be, depending on well conditions.

Tendeka’s approach is to standardize the lengths and material grades of the screen jackets utilizing inflow control devices which constitute by far, the majority of the screens produced by the company. This significantly reduces manufacturing costs and waste created during construction.

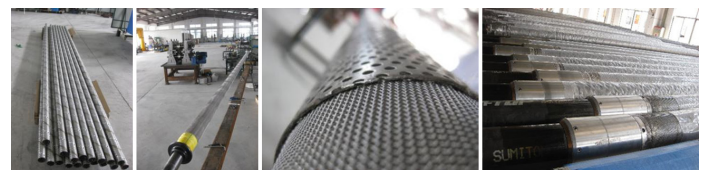


Figure 1: The 7m jackets (left to right) are fitted with layers of the premium mesh screen jacket with an outer shroud on the outside and a drainage layer underneath

As an example, by eliminating the necessity to change length and OD of every ten screens, the advanced completions and production optimization specialist can build about 35% more screens per day than if a customized design was needed. Most notably, the percentage of custom-built screen designs beyond the proposed scope declines each year due to this plug and play philosophy.

This agile approach can enhance decision-making to select or swap, at the most appropriate interval, inflow, outflow or check valve devices to counter saturation, possible sand production, porosity, and permeability, at any time. It is a game changing ability for an industry now more focused than ever on efficient, sustainable, optimum performance.