msc resources

Business Unit - Screens

- After 25 years of intense learning curves -

founded in 2016

AT A GLANCE

Exceptional resistance to wear:

The higher the hardness, the lower the erosion

Equipment and Services for Underground Operations for O&G, Water, Geothermal and Mining

msc resources, BU Screens - AT A GLANCE

The company msc resources was founded and established in 2016 to support its clients finding and applying new technologies for their respective industries.

The founder of MSC Resources has vast experience related to sand screens for oil & gas applications where 3M Ceramic Sand Screen Systems and Con-Slot Screens were among the companies which he had worked with previously.

In early 2020 msc resources established a new superior technology to solve the issues related to sand production with serious sand erosion issue faced by the oil & gas industry on the basis of the standard wire-wrapped sand screens without base pipe.
In order to increase the sand screen hardness especially for the wells that have serious sand erosion issue, the screen is treated with Boron in the furnace in the process called Boriding.

msc resources, BU Screens - AT A GLANCE

The Gas Sand Erosion Test (GSET) for the Boron treated wire-wrapped sand screen was conducted at 100 m/s for 48 hours with excellent results.

Currently additional tests on the Boron treated sand screen are being conducted which also include mechanical strength tests.

The official test results for both mechanical strength and erosion test are expected to be available by end of September 2021.

msc resources, BU Screens - AT A GLANCE

The sand screen is a standard stainless steel wire-wrapped without base pipe which is a proven technology with many installations at the Oil & Gas sites around the world.

Various methods of installations can be performed with this type of sand screen including installation through tubing using slickline which can fit any production tubing sizes.
Screens of this design are widely used all over the world.
In the last >10 years alone, thousands of meters of this type of sand screens have been manufactured and delivered all over the world (some references can be found in the attached track record).

However the industrial use of Boron treated wire-wrapped sand screens in the Oil & Gas wells have not yet been proven since they are just starting the global manufacturing of this technology (it will the first in the world). For reference, the Boriding technology has already been in the market for more than 40 years in the mechanical engineering, chemical, petrochemical and glass industries.

msc resources, BU Screens - AT A GLANCE

If normal sand screens with a pipe base compared with wire-wrapped sand screens without base pipe, we can see the obvious advantages as follow:

- Maximum possible open surface keeping sufficient strength characteristics of the screen
- Provision of laminar flow of media, filtered by the screen
- Formation of natural gravel screen
- Provision of minimum hydraulic resistance
- Provision of conditions for reverse circulation

A Comparison of the screens between with and without Boron treatment (Boriding technology), it is obvious that Boron treated screens have MUCH more resistance to erosion, corrosion and cavitation.
In term of hardness, Boron treated screens have the highest hardness level available in the market thus providing the best protection against erosion. Boron treated screen technology alone does not provide the screen the advantage in reducing plugging tendency and scale formation. These advantages are provided by the design of wire-wrapped sand screen without base pipe.

msc resources, BU Screens - AT A GLANCE

However, if we compare screens from other manufacturers and other designs, then, for example, even wire-wrapped sand screen without base pipe coated with ceramic has a number of disadvantages since the ceramic coating is done only on the screen's outer surface which will effect i.e. rounding off the sharp edges of the profile wire, which is very important in the effectiveness to reduce the effect of bridging/plugging.

With Boron treated screen technology, the sharp edges of the profile wire will not be effected even after the Boriding process thus reducing the tendency to clog the screen.

And the fact that Boriding process covers not only the outer surface but also all the elements of the screen design (inside & outside), it provides additional resistance to erosion and corrosion for the whole screen.

msc resources, BU Screens - AT A GLANCE

- There are 2 types of Wire-Wrapped Sand Screens (WWSC) provided by msc resources:

1. XT *EaziGoFlo* Sand Screen for basic/standard screen (XT stands for Cross Technology)
2. AT *EaziGoFlo* Sand Screen for Boron treated screen (AT stands for Armouring Technology)

Information/brochures available for reference Wire Wrapped Sand Screen:

1. Brochure/Leaflet
2. Specifications (basic material type used is exclusively AISI 316 Ti)
3. Advantages
4. Track Record (for XT EaziGoFlo)
5. Case Histories for Shell (for XT EaziGoFlo)
6. Client's Inquiry Sheet
7. LWK Armouring Technology Brochure (the company which provides Boriding Technology)
8. Technical Summary - Comparisons