

PRODUCT DATA SHEET
SES Standard Patch

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Stainless Steel

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Hydrogenated Nitrile Butadiene Rubber HNBR

CHALLENGES

- Life of the well solution
- Seal effectively in oval, out of gauge or irregular borehole
- Repair damaged or corroded casing
- Seal off leaking couplings or separated pipe
- Leave large ID access to the well below for most standard tools

The setting procedures for Saltel Patches are very different from those used with other expandable systems. The steel is not pushed out to a pre-determined diameter by a cone, but is expanded using an inflatable element which will ensure the patch is pushed out to seal effectively against the inside of the existing casing, irrespective of the precise casing ID.

SALTEL EXPANDABLE STEEL STANDARD PATCH (SES PATCH)

SES Patch is a permanent solution used to repair a zone of damaged tubing or casing, to shut-off unwanted perforations, to seal a leaking sliding sleeve, or other remedial operations. This expandable short length of tubular is made from high quality stainless steel with an elastomer outer skin and a profiled sealing system, the SES Patch is run on tubing, drill pipe, or coil tubing.

At depth the Patch is expanded using a high pressure inflatable packer, and pushed against the casing to activate the outer seals. The setting tools are extracted to leave a pressure resistant inner lining inside the well.



RUNNING PROCEDURES

The Down hole expansion tool is positioned inside the Expandable Steel Patch. The inflatable packer section is then inflated enough to grip the inside of the Patch (not enough to start expansion). The assembly is Run In Hole to the setting zone. The packer is inflated using pressure from surface to expand the top of the Patch, anchoring it in place. The packer is then deflated, run in 3 ft / 1 m, and the next section is expanded. This is repeated as often as necessary until the full length is expanded, and BHA is pulled back to surface.

FEATURES

- The high expansion ratio enables running the Patch with a large clearance, avoiding sticking problems while running in hole
- A real time setting controller verifies the ID of the set Patch during the operation. Any anomaly can be immediately detected and corrected.
- Tubulars primarily made from 321 stainless steel
- Outer skin in hydrogenated nitrile (HNBR) profiled to ensure a good seal
- The Patch will set effectively in any intermediate diameter within its range
- Seals effectively even with ovalisation up to 25% in casing or open hole
- A second patch can be run through a previous Patch and set below (except in heavy weight casing / thick Patch, see products specs)

APPLICATIONS

Production Optimisation

- Water, Gas & Sand shut-off
- Modifying injection profiles

Well Maintenance & Repair

- Casing & Tubing Repair
- Parted Casing
- Screen repair

Completion Repair

- Frac ports
- DV tools
- Sliding sleeves

Standard patches are rated up to 150°C / 300°F. Special patches are also available for HT applications.



The Expandable Steel Patches can be used in a wide range of casing weights and sizes.

Patches are available for full range from 4-1/2 in. to 13-3/8 in. casings. Each Patch will fit the full range of casing weights in a given size.

Standard running lengths are from 10 - 40 ft (3 - 12 meters), which will shorten by 3% to 6% during setting depending on the expansion ratio.

Longer patches can be studied as required. Patch's can be customized and optimized for specific well conditions.

The standard range of Saltel Expandable Steel Patches is particularly well adapted to sealing off perforations or repairing a short zone of damaged casing, however the ability to simply and reliably expand stainless steel downhole to fit into different shapes and sizes opens up a wide range of potential applications. The Patch is also suitable for new well applications such as Frac port repair, DV tools or sliding sleeves repair.

Please consult Saltel Industries for a personalized study adapted to your well conditions.

