

South Africa Sees Value From Flsmidth's Nextstep Innovation

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SOUTH AFRICA SEES VALUE FROM FLSMIDTH'S NEXTSTEP INNOVATION

FLSmidth's innovative nextSTEP™ flotation technology is proving itself in the South African mineral processing space.

According to Ricus van Reenen, Regional Product Line Manager – Separation at FLSmidth, the nextSTEP™ rotor and stator combination has been at work for over a year at a large South African platinum mine, achieving positive results.

"The customer has achieved significantly lower power consumption on the full-scale retrofits we installed early in 2018," says van Reenen. "The more efficient design allows the same or higher slurry circulation at reduced rotor speed, leading to lower power draw."

The retrofits have been applied to both primary and secondary flotation applications, where energy savings of over 10% have been achieved. Years of research and development have been invested in the nextSTEP™ technology, which was originally launched in 2015.

Among the key design elements are the addition of slots to the stator, adjustments in the rotor profile and a parallel distance between the rotor and stator.

"Energy dissipation is now more uniform than in traditional forced-air designs," van Reenen says. "This means a more even wear pattern across the rotor and stator, and therefore longer intervals between maintenance."

In the South African installations, the wear on the rotors and stators has been minimal after more than a year's operation. In the one flotation cell, the equipment has been operational for 15 months. The thickness of the rotor has reduced from 65 mm to only 60 mm, and the stator from 75 mm to 70

mm. After 13 months of operation in the second installation, the wear is even less. The rotor's thickness has reduced from 65 mm to 63 mm, while the stator was down from 75 mm to 73 mm.

Van Reenen highlights that there have been other benefits experienced by local users of the new technology. Among these has been 16 to 18% less blower air usage, with more concentrated bubble formation.

"Better turbulence energy dissipation around the rotor and stator region, with its related finer bubble size distribution, creates more surface area for bubble-particle attachment," says van Reenen. "This has delivered more froth and a higher mass pull on our local units."

The success of the nextSTEP™ technology has led to further retrofits being planned in South Africa, which is in line with FLSmidth's drive to promote mines' productivity and performance. Van Reenen says the intensive R&D process continues apace and is not just in the rotor and stator design but also includes areas such as smart control systems and continued digitalisation of process solutions.

Captions

PIC 01 : Ricus van Reenen, Regional Product Line Manager – Separation at FLSmidth.

PIC 02 : FLSmidth nextSTEP rotor stator for a 600 m3 flotation cell.

PIC 03 : Smaller and parallel clearance between rotor and stator makes the nextSTEP a more efficient pump allowing for slower rotation and lower power consumption.

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Contact information

On behalf of FLSmidth (Pty) Ltd

www.flsmidth.com

Twitter : @FLSmidth

LinkedIn : FLSmidth

Facebook : @flsmidthgroup

Instagram : flsmidthgroup

YouTube : FLSmidth

From Coralynne & Associates

communicate@coralynne.co.za

Twitter : Coralynne_Assoc

LinkedIn : Coral-Lynn Fraser-Campbell