

## **Improved Local Design Of Enduron Vibrating Screens By Weir Minerals**

### **Blurb for online platforms**

With its extensive range of Enduron® vibrating screens proven in the field, Weir Minerals Africa is now locally designing and manufacturing new-generation linear motion vibrating screens. South Africa also hosts Weir Minerals' global screening and separation technology group.

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#### **IMPROVED LOCAL DESIGN OF ENDURON VIBRATING SCREENS BY WEIR MINERALS**

With its extensive range of Enduron® vibrating screens proven over the past 40 years, Weir Minerals Africa is now locally designing and manufacturing new-generation linear motion vibrating screens.

According to Christian Stehle, head of engineering at Weir Minerals Africa, this design capability provides the flexibility to produce vibrating screens to suit each customer's plant layout. At the same time, the designs will optimise cost, efficiency and performance. South Africa also hosts Weir Minerals' global screening and separation technology group.

"This expertise ensures that our robust Enduron vibrating screens provide exceptional classification and dewatering screening performance," says Stehle. The screens are deployed in a wide range of minerals processing applications. He notes that vibrating equipment is generally more challenging to design than static equipment due to the high frequency cyclic loading to which the machines are subjected.

"The final design must address key criteria like screening efficiency, throughput and loading, while still operating within the acceptable fatigue life limits of the materials of construction," he says.

Stehle highlights that the use of Finite Element Analysis (FEA) tools allow engineers to optimise screen life by obtaining the stress and deflection levels in the equipment and applying the appropriate structural design and utilisation of materials in the areas experiencing high stresses.

"Traditionally, screen designs used to be heavier in an effort to extend the life of the equipment," he says. "Using FEA tools during the design stage allows us to retain structural integrity while actually reducing the overall weight of the machine."

While there are areas of high stress on the equipment that need more strength, technology tools indicate where lower stresses occur. In these areas, less steel can be used to make the structure lighter. Leveraging this technology, the weight of some new-generation screens has been cut by up to 15%.

One of the new, modern screen designs is part of a recent Weir Minerals Africa complete comminution plant contract for a South African mining project. The scope includes two crushing stations, a screening station and all the related feed chutes, bins and conveyors.

Stehle notes that Weir's Synertrex™ IoT platform can also be applied to monitor and improve the performance of its vibrating screens. Synertrex™ technology is an industrial internet of things (IIOT) system that allows operators to monitor every aspect of their equipment's operation, to prevent problems and increase throughput.

#### **Captions**

NEW GEN PIC 01 : Christian Stehle, head of engineering at Weir Minerals Africa.

NEW GEN PIC 02 : Weir Minerals Africa is designing new generation linear motion vibrating screens locally.

NEW GEN PIC 03 : Use of Finite Element Analysis allows engineers to optimise new screen designs.

NEW GEN PIC 03 : The new generation screen design weighs up to 15% lighter than the previous design.

NEW GEN PIC 04 : All locally manufactured screens are tested at the Alrode facility before being shipped to the end user.

#### **Hashtags**

#mining

#screening

#technology

#innovation

#engineering

**Contact information**

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