

DE BEERS GROUP

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Luminescent Tracers

APPLICATION

Tracers are an essential component in setting up X-ray based diamond sorting machines. Tracers are luminescent which allows them to be recovered by X-ray machines. Through calibration, the machine's detection sensitivity can be adjusted to the most cost effective level, thus maximising diamond recovery and minimising the volume of waste material recovered. To aid this procedure, tracers are manufactured in 4 luminescence intensities and 4 sizes.

The luminescence intensities are indicated by different colours, blue, brown, grey and violet, and are available in sizes 3.2mm, 5mm, 8mm and 12mm.



Ceramic Diamond Simulants

APPLICATION

The use of diamond simulants makes it possible for the management at mining sites, and particularly at diamond separation and recovery plants, to identify the stages in ore handling or subsequent processing, where stones may be trapped or damaged in order to take corrective action.



The simulants are available in a range of colours, i.e. white, red, blue & green and sizes 4mm, 6mm, 8mm, 12mm, 16mm, 20mm and 25mm. All simulants have sufficient luminescence intensities so that they can be recovered by X-ray technology.

BENEFITS

The financial benefits to the mine, of eliminating and avoiding hang-up or damage, are considerable.

Without the use of simulants, it would be virtually impossible to quantify accurately the losses attributable to avoidable diamond damage.

Diamond damage generally occurs most frequently at:

- DMS cyclone feed pumps
- Concentrate transfer pumps
- Pneumatic transfer into bins
- Other transfer points



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X-ray Transmission Tracers

APPLICATION

Tracers are an important component in setting up XRT sorting machines.

XRT tracers have high carbon content that allow them to be recovered by XRT sorters without needing to adjust the machine sorting parameters as the machine sees them as diamond.

Tracers are required to calibrate the machine accurately.

Through calibration the machine's detection efficiency is optimised, resulting in minimal yield and maximum diamond recovery, while also allowing accurate diamond size and mass estimations.

Tracers are manufactured in the following sizes: 5mm, 8mm, 12mm, 15mm, 25mm, 40mm & 50mm



NOTE: These tracers and simulants were developed for use on De Beers Commercial Technology produced sorters. No guarantees are applicable when these components are used on any other sorting technologies.



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