

HOW DO WE MEASURE EXTERNAL RADIATION EXPOSURE?

Workers' external exposure to gamma rays (penetrating radiation from their environment) is measured directly using personal dosimeters. There are two types of dosimeter in use at the Rössing Uranium mine:

Thermo-Luminescent Dosimeters

(TLDs) are used for designated radiation workers – people who are monitored continuously since they work in areas where the ambient radiation exceeds background levels. TLD badges are worn for a period of 12 weeks and are then returned to the supplier for analysis and re-setting.

The monitoring results obtained from these dosimeters are reliable only if the wearer is conscientious about wearing the TLD all the time when at work. If this does not happen, the result shown will be lower than their actual exposure, and the risk to the worker will therefore be underestimated.

TLD: Worn every shift for a period of 12 weeks. Continuous exposure dose measurement for penetrating radiation, results known only after wearing period has elapsed.



Thermo-Luminescent Dosimeters

Electronic Personal Dosimeters

(EPDs) are used for short term monitoring of penetrating radiation, when this is needed.

These dosimeters indicate a direct reading, which means the monitoring result for the wearing period (one day, or sometimes only a few hours) can be known immediately.

The monitoring result obtained for the wearing period can then be extrapolated to calculate exposure for a full working year if the wearer performs work in similar environments throughout a year.



Electronic Personal Dosimeters



EPD: Worn for a few hours or one day. Instant results.