

Intensity–Frequency–Duration design rainfalls—2013 release

The Bureau of Meteorology's release of the new 2013 Intensity–Frequency–Duration (IFD) design rainfalls is part of the revision of Engineers Australia's design handbook [*Australian Rainfall and Runoff: A Guide to Flood Estimation*](#).

Outputs from the revision project will be delivered progressively over the next two years. The new IFD design rainfall estimates will be delivered first to ensure the other inputs to design flood estimation are developed in a manner that is consistent with these estimates and to allow engineers to undertake early testing of the sensitivity of existing infrastructure to the new estimates.

The other outputs from the revision project will include revised temporal patterns, areal reduction factors, losses and base flow.

During this two-year transition period, two versions of IFD design rainfalls will be available for use—the new 2013 IFD design rainfalls and the existing IFD design rainfalls (released in 1987).

While the new IFDs are derived from a longer and more extensive dataset, careful consideration is needed before they are used with other existing inputs to design flood estimation techniques.

Make an informed decision

The aim of the 1987 edition of *Australian Rainfall and Runoff* (ARR 87) design flood estimation techniques is to achieve Annual Exceedance Probability (AEP) neutrality—where the technique results in a design flood estimate with the same probability of exceedance as the IFD design rainfall estimate. All the other design flood inputs from ARR 87 were developed specifically to achieve this aim. The revised ARR aims to achieve AEP neutrality, and so updates to the other design flood inputs are needed to ensure new design flood estimates are produced with the same AEP as the new 2013 IFD design rainfalls.

You cannot assume that using the 2013 IFD design rainfalls with ARR 87 techniques and design parameters will deliver a more reliable estimate of the design flood.

In most cases it would be prudent to use the ARR 87 design parameters and conduct sensitivity testing with revised ARR design parameters (including the 2013 IFD design rainfalls) as they become available. This will allow you to assess the impact of updated information on your decisions.

The 2013 IFD design rainfalls should definitely **NOT** be used in conjunction with the following techniques:

- Probabilistic Rational Method
- Other regional flood techniques based on ARR 87 IFD design rainfalls.

If you are seeking consistency across a number of flood estimation studies, you should continue with the ARR 87 design parameters and do sensitivity testing with the 2013 IFD design rainfalls until the entire suite of new ARR techniques and design parameters is available.

If you are undertaking a one-off flood estimation study you may choose, on a case-by-case basis, to use the 2013 IFD design rainfalls and other revised ARR design parameters as they become available.

In addition, careful consideration should be given before using the 2013 IFD design rainfalls with the Average Variability Method (AVM) temporal patterns and design losses from ARR 87.