IDF

The Rational Method (and its variants) bases its calculations on Rainfall Data in the form of **Intensity, Duration and Frequency (IDF)** data.

IDF files are created on the principle that for a given Return Period (or Frequency) and a set duration, a storm will have a known average intensity. For example a storm near Seattle in the USA with return period of 5 years (frequency), and a duration of 20 minutes has an average intensity of 17.5 mm/hr.

The IDF file represents a single frequency and is a sequential list of average intensities for different durations of storm. In the Rational Method, each pipe or channel is designed for the average intensity of storm of a duration equal to its time of concentration. It could be said, therefore, that each pipe or channel in a network is designed for a different storm, as each pipe has a unique time of concentration.

The Rational Method is therefore not suitable for backwater analysis, or any analysis that involves the effect of one continuous storm, as no two pipes are designed using the same storm. A full analysis of the system should be used to determine the real hydraulic grade lines, which will vary minute by minute throughout a storm.

Workflow - What's next...?

Connect Inflows to your **Stormwater Control**, specify **Inlets** or **Outlets** or connect to another Stormwater Control or **Junction**.

Toolbar

New

Allows a new IDF record to be created.

Load

Allows an IDF record to be loaded from file. These include:

- IDF File (.xpidfx) - The xpdrainage file format for IDF records.
- Text File (.csv,.txt) - Allows IDF data to be loaded from comma seperate files via the Universal Importer.
- Excel File (.xls,.xlsx) - Allows IDF data to be loaded from Microsoft Excel format.

Save

Save the current rainfall event to a .xpidfx file so it can be reused elsewhere.

Buttons

1, 2 & 5 mins

Creates a set of 100 entries at the specified interval ready for data to be entered.

Repeat

Repeats the currently selected Intensity value down the spreadsheet.

Name

This is the label given to the IDF data that is then shown on the Design Criteria form. It can be used to give the IDF data a suitable label. i.e. 5 year return period.

Spreadsheet

Duration

The duration that (average) intensity applies to.

Intensity

The average intensity for the duration at the given return period (ARI).