

FSR Rainfall

xpdrainage supports two UK rainfall methodologies. The Flood Studies Report (FSR) was published in the mid-1970s and used rainfall from 1941 - 1970. The Flood Estimation Handbook (FEH) was published in 1999 and used rainfall from a dataset between 1961 - 1990.

FEH has a more recent dataset and used a larger rainfall record for generating the methodology. FEH concentrated on rainfall event durations of one hour and above. Although it states it can be relied on for durations as short as 30 minutes it may require further research for use below this duration. The FSR report analysed sub-hourly rainfall and therefore may be more appropriate for shorter storm durations such as required for the Modified Rational Method.

Different Approving Authorities may require you to use a particular methodology, and with both methods available xpdrainage allows for compliance with a range of regulatory requirements. Without guidance from an Approving Authority users should refer to the references for FSR and FEH and the various limitations of each method to make an engineering judgement on the most suitable methodology.

Users should be aware that the rainfall can vary significantly for different areas, durations and return periods, and so it may be considered prudent to check with both rainfall methods.

Return Period (years)

Return periods from 1 to 1000 years are provided.

Rainfall Model : FSR Rainfall

Region

England and Wales or Scotland and Ireland

M5-60 (mm)

This is the rainfall depth (specified in mm) for a 60 minute storm with a 5 year return period.

See Fig A.1. of "Design and Analysis of Urban Storm Drainage" - The Wallingford Procedure, Volume 3 October 1981.

Ratio-R

This is the ratio of the rainfall depths from the 60 minute storm to the 2 day storm (both have return period of 5 years), i.e. M5-60/M5-2day.

See Fig A.2. of "Design and Analysis of Urban Storm Drainage" - The Wallingford Procedure, Volume 3 October 1981.

M5-60 and Ratio-R details can be obtained by clicking the [Map](#) button.

Summer / Winter Storms

Both the Summer 50 Percentile Profile and the Winter 75 Percentile Profile are supported. The shape of the winter profile is based on applying Lagrange Interpolation to the published CRP values (see Flood Studies Report). Either or both can be run.

Storm Durations

A set of [Storm Durations](#) and run times must be specified for the analysis to run back to back.



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Workflow - What's next...?



Connect [Inflows](#) to your [Stormwater Control](#), specify [Inlets](#) or [Outlets](#) or connect to another [Stormwater Control](#) or [Junction](#).