Ref: FAQ0161	Version: 1.0
Title-SoundSens with unknown pipes	
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How to carry out SoundSens testing when the pipe layout and composition are unknown

A segment of pipe might contain different materials within it, some of the pipe might contain PVC (from point repairs) and some of it might contain iron (the original material). If a leak detection test is carried out you can indicate the different materials of the pipe in the pipe layout (by use of joints)

Pipe materials – In the real world pipes break, someone finds the break, digs a hole, repairs an iron pipe with a piece of PVC and it might not have been logged (position, length etc).
SoundSens along with most leak detection equipment works on the principle of listening for the noise of the leak, and by knowing the pipe material and size, these can be compared to research results which will accurately define the speed of sound in that particular pipe. Knowing the speed of sound, then the software compares the noise (correlates) from the two points and calculates the position of the leak.

If you know that the pipe is made from different materials and you know where the join is, then you can create an accurate map in the pipe layout by using joints between the bits of pipe. You should definitely do this if you can do it accurately. This will give you accurate correlation.
If you don't know where the join is then your results are likely to less accurate. Also if the pipe has been unknowingly repaired the results could also be inaccurate. However, the more loggers you can put on the test area, the more likely the accuracy of the test as the leak noise will be correlated from a number of points which will improve the accuracy of the test.

You may find SoundSens Software doesn't include all the possible pipe materials/ sizes you might encounter in you system – you can update the software yourself by either manually entering your own sound velocity for a particular pipe or, if you are reasonably PC literate, the pipe database is an Access database called 'pipe database.mdp' in the Soundsens software folder – you can add/edit your own pipe information in here. (See FAQ0151)
If you carried out an internet search you might find better information relating to local pipe configurations which could be used.

Having used the equipment to find the leak with the highest level of confidence, HWM advice is to always try and verify this with a 'listening stick' or a 'ground microphone' at the actual dimensions pinpointed. This should give you the final confidence before you commit to digging, however we recognise this is difficult in urban areas where high levels of background noise can interfere.

Document History:

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