Energy UK

The voice of the energy industry

Gas Meter Installation Safety Measures

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The below table is a log of measures discussed by Energy UK members as potential approaches to improving the safety of gas meter installations. We welcome parties adopting approaches in the interests of improving industry safety performance but are unable to provide assurance for the effectiveness of the approaches listed, as such the adoption of any of the approaches listed is at the adopting party's own risk.

*Please note that where links to specific products are included in the table, alternatives may also be available from other sources. Energy UK is not endorsing the use of any particular product. The links are used purely for illustrative and information purposes.

Issue	Measure	Description	Purpose	Relevant considerations	Notes
Pressure drop test not being done/ not being done properly	Digital Manometer	An electronic measurement of gas pressure which records and time stamps the gas pressure drop test. This could be linked to the operative's handheld device as part of their workflow to digitally control progress through the job.	Ensures that the on-site gas pressure drop test is controlled, leading to an increase in accuracy across operative. The digital record supports any subsequent investigation.	Potentially significant asset cost, with additional maintenance required. Some digital syncing issues have been experienced. Cannot capture slow-release leaks (same as traditional gas pressure drop approach).	

	Dyed water in pressure test gauge	The use of dye in the pressure gauges for gas pressure drop tests increases the visibility of leaks and is clearly visible when photographed (alongside a timer) - which operatives may do as part of their installation process.	Supports operative in identifying leaks when undertaking the gas pressure drop test. If photographed, supports any subsequent investigation.	Does not provide the same robustness as a digital test. Cannot capture slow-release leaks (same as traditional gas pressure drop test approach).	
	Photographic evidence	Photographing the gas pressure drop test result (gauge and timer). This could be linked to the operative's handheld device as part of their workflow to digitally control progress through the job.	The requirement of the photograph ensures that the test is carried out for the appropriate time. The need for a photograph is a cognitive reminder to the operative to undertake the test (and of the appropriate outcome). Supports any subsequent investigation.		A general view that the requirement to upload photographic evidence is already resulting in a reduction in post-install incidents. More evidence to be provided once the process has bedded down.
	Illuminous leak detection fluid	The use of illuminous leak detection fluid increases the visibility of leaks.	Supports operative in identifying leaks.	Does not pre-empt the amount of time the fluid is left on to enable leaks to be detected.	

	Automate the need for pressure drop test result on installers hand held device	Software on hand-held device will not progress to the next page until the drop test result has been inputted. Improved further if the software does not allow progress where the pressure drop test result is too low.	Prevents the pressure drop test being forgotten.	The field could be duped by disingenuous results.	
Stress-fractures on outlet pipework caused by installation	Pipework clamps	Clamping outlet pipework to the wall prior to replacing the meter can prevent the pipework being stressed during meter replacement activity.	Reduces stress on outlet pipework during meter installation	Theoretical solution, not known to be used in practice	
Screw tightness	Paint pen on pipework	Using a paint pen to draw a line from the pipework, over the union, to the meter on both the inlet and outlet marking the position of the unions, and therefore the tightness of the screws, as left by the installer.	Supports investigation; improves installer accountability; provides cognitive trigger for installer to ensure unions are tight	Care must be taken to ensure that the pen used does not have a corrosive influence on the pipework.	Example of product: https://www.edding.com/professional-marking/products/specialist-markers/edding-8030-nls-high-tech-marker/
	Marking each screw	Using a pen to mark each screw once the meter has been installed, denoting that this screw has been appropriately tightened.	Supports investigation; improves installer accountability; cognitive trigger for installer to check screw tightness	Does not prevent the operative not properly checking each screw.	Example of product: https://www.edding.com/professional-marking/products/speciali

				Does not prevent the operative missing a screw. Care must be taken to ensure that the pen used does not have a corrosive influence on the pipework.	st-markers/edding-8030-nls-high-tech-marker/
Poor soldering	Flexible connectors on meter outlet	Using flexible connectors to connect the meter to the outlet pipework.	Removes the need for hot works in a number of instances.	Currently not permissible for revenue protection reasons (BS 6400).	
	Pipe cleaning tool	An effective abrasive tool can be used to clean the ends of the pipes prior to soldering, this improve the connection as the cleanliness of the pipe affects the fixative.	Improves the quality of soldered joints.	If pipe is fixed to the wall the tool cannot easily access the end of the pipe.	
	Single fitting joints	Using a different type of joint which only has a single fitting reduces the amount of soldering required.	Reduces scope for an operative to make an error when soldering.	Does not remove the need for soldering. Increased cost of fitting, but no coupler required.	
Missing parts	Parts box	Housing all necessary parts for each meter exchange in a box, once	Installation aid		

		the meter is installed the box should be empty.			
	Catch tray	A tray placed beneath the meter which should catch any falling parts.	Installation aid	Parts may bounce out; may not be space beneath the meter.	
	Coloured washers	Coloured washers may be more visible to installers, making it easier for installers to see if any are missing, post-install.	Installation aid	We understand these cannot be manufactured.	
Safety check reminders	Slogans	Slogans (e.g. 'Have you left it right?') or simple mnemonics designed to remind the installer of the safety checks they must carry out.	Behavioural aid		
	Automate the need for photographs on installers hand-held device	Software on hand-held device requiring photographs to be uploaded before allowing data progress.	Supports investigation and acts as a cognitive trigger to remind installer to do safety checks.		
Overall competency	Back to work process	If an operative's back to work process is signed off by a health and safety officer this will provide an opportunity for a comprehensive review of operative competency.	Manages operative competency		

	Practice boards in the local depots	Gives operatives a chance to practice skills in a controlled environment, albeit at their own initiative.	Improves competency.	Logistical difficulties.	Noted that there is general recognition that these have been very helpful for installers to discuss unusual/previously unseen situations with managers/supervisors and to practice rarely used skills.
	Engineer feedback	Encouraging engineers to feedback their experiences in the field (e.g. through an open culture) will enables insight into engineer experiences (both install specific and workload related) building competency.	Increased competency	Somewhat dependent on operatives' personality therefore not a universal solution. Also dependent on company culture.	
	Training installers on what 'bad feels like'	Training installers to identify an unsuccessful installation may provide a reference point for them to identify when something has gone wrong with an aim to improve competency	Increased operative competency.		

	Reminder of legal responsibilities	Often part of on-boarding process.	Increases operatives' focus.		
Misc.	Anti-tamper device	Upon completion of the relevant meter tests and after ensuring gas tightness by application of Leak Detection Fluid the operative fixes a plastic collar around union.	Supports post-incident investigation. Also increases accountability therefore provides a nudge to the operative.		
	Seals around pressure test point	Upon completion of the relevant meter tests and after ensuring gas tightness by application of Leak Detection Fluid the operative places a seal around the test point	Supports post-incident investigation. Also increases accountability therefore provides a nudge to the operative.		