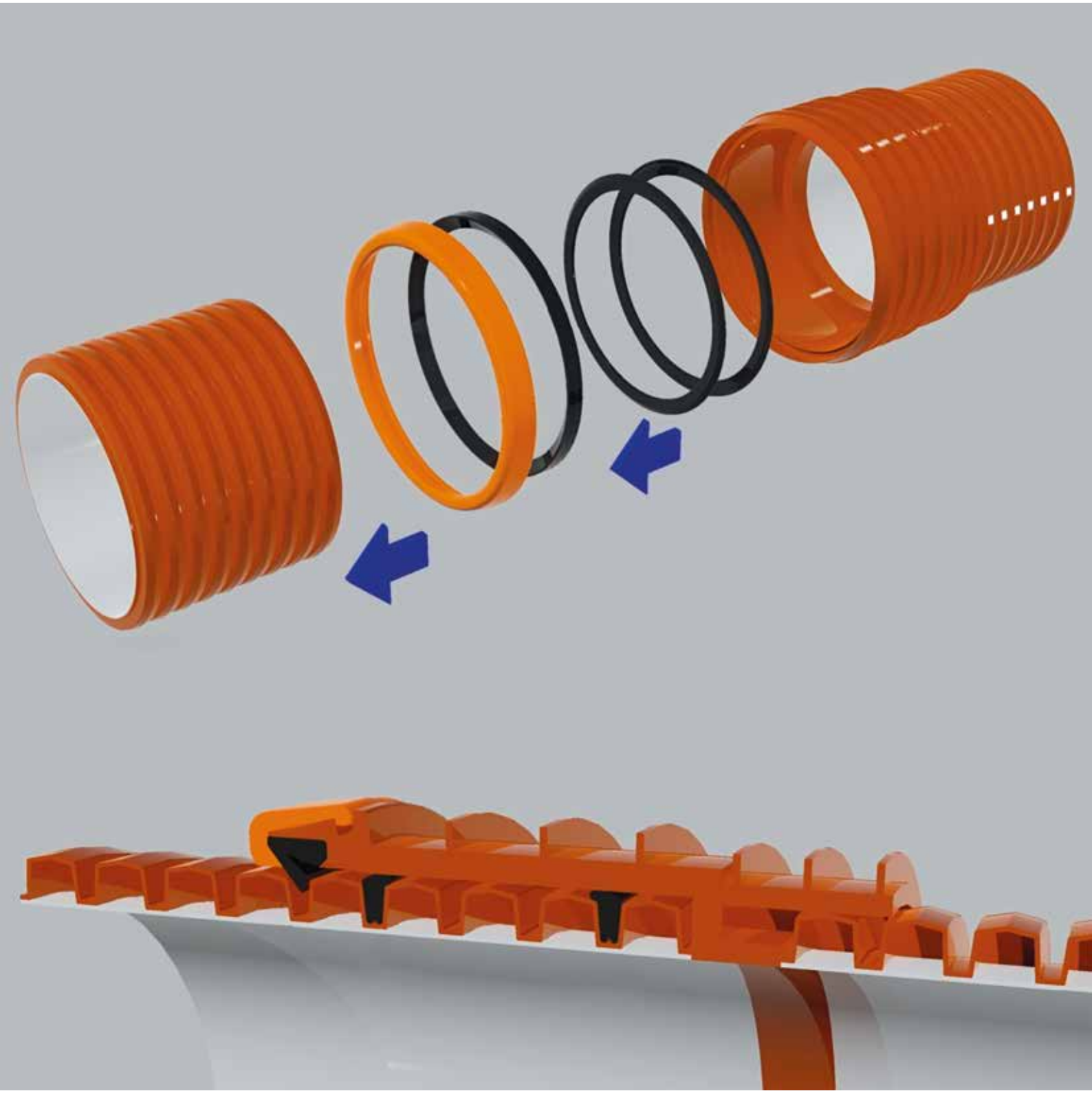
PRAGMA LOCK



Lock to prevent coming off of spigot-and-socket joints of Pragma DN/OD pipes

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Pragma Lock

It is not an unusual practice to lay pipes in more or less adverse soil conditions such as loam, landslides, expansive soils, which can cause displacement of the pipe trench padding. Knowing that nowadays it is a common practice to use rubber sealed spigot-and-socket joint corrugated pipes for the construction of infrastructure sewers, and given the above-described conditions there is a risk that the socketed connections of pipes may come off, thus causing loss of watertightness and contamination of the soil. Needless to say, when the laying and backfilling of pipes has been performed in good quality, such risk would be considerably low. Nevertheless, if the job has been performed carelessly, it is possible that backfilling may not be compacted quite well, the excavated trench and padding may not be worked and reinforced as they should have been, thus increasing the risk of spigot-and-socket joints coming off.

That is why Pipelife Bulgaria herewith proposes a simple yet quite efficient solution to lock the spigot-and-socket joints that will in fact ensure protection against their coming off.

The figures below show the locking system components, the pipes equipped and ready for installations and the final result – the locked Pragma pipe spigot-and-socket joint - as it would look like.

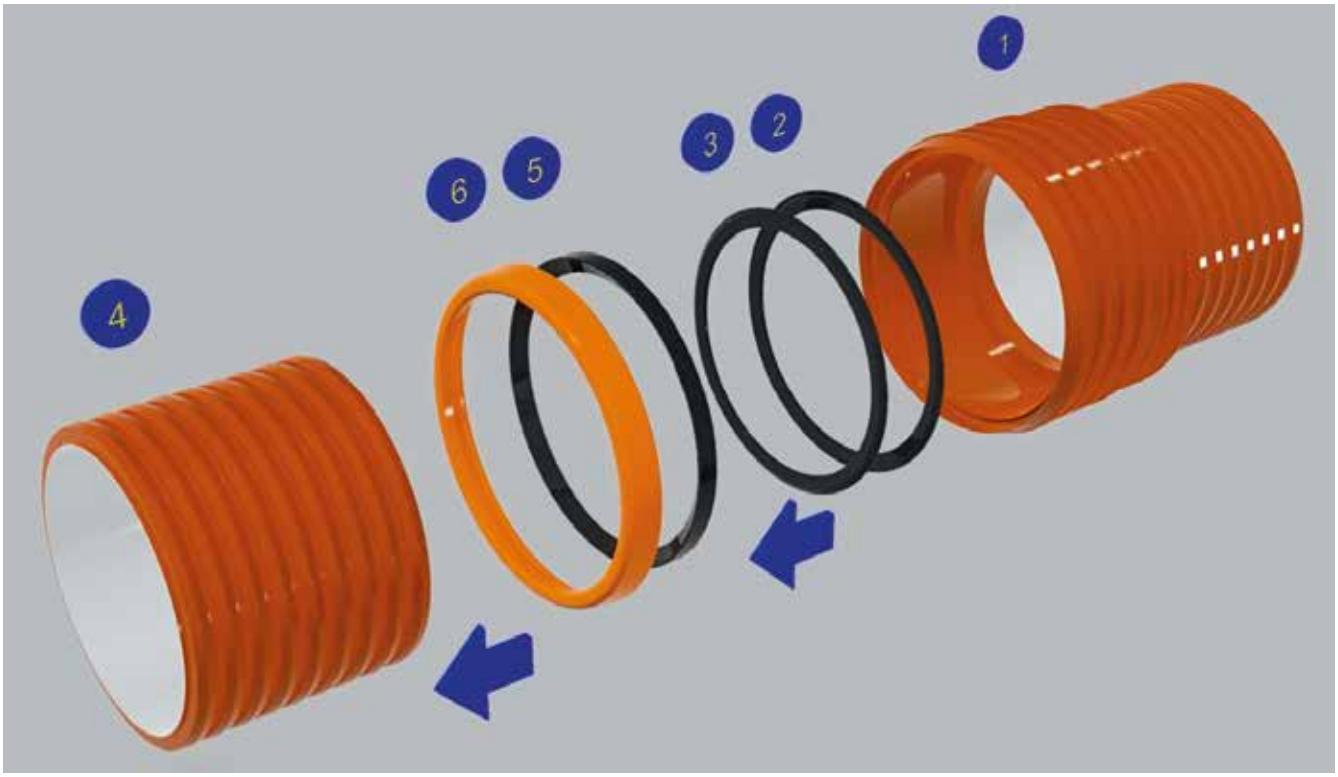


Fig.1. Components of the locked spigot-and-socket joint

1. Pragma pipe socket end;
2. EPDM O-ring;
3. EPDM O-ring placed facing opposite the direction of inserting the spigot end into the socket end;
4. Pragma pipe spigot end;
5. EPDM O-ring together with the Click-Ring fitting;
6. Click-Ring fitting.

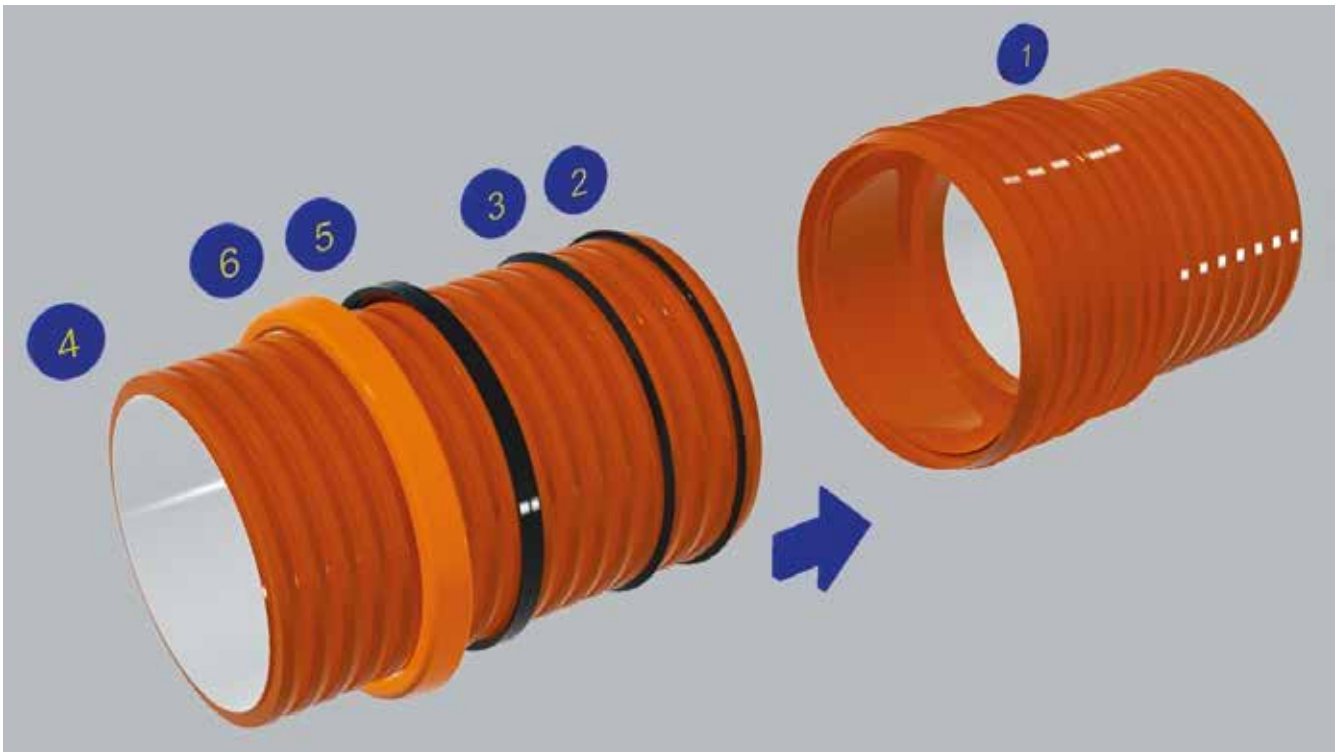


Fig.2. Pipe sets ready for installation

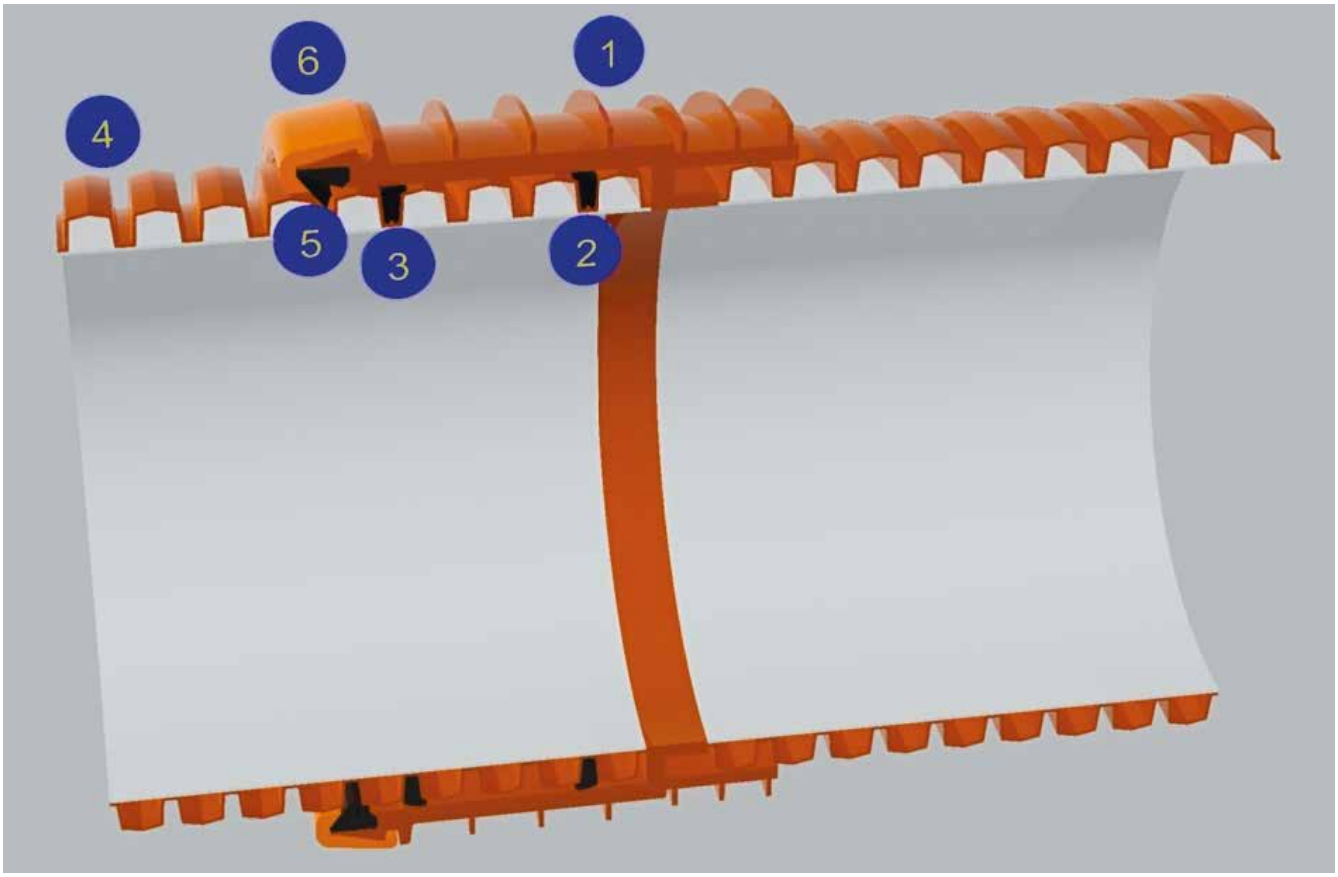


Fig.3. Locked spigot-and-socket joint of Pragma pipes

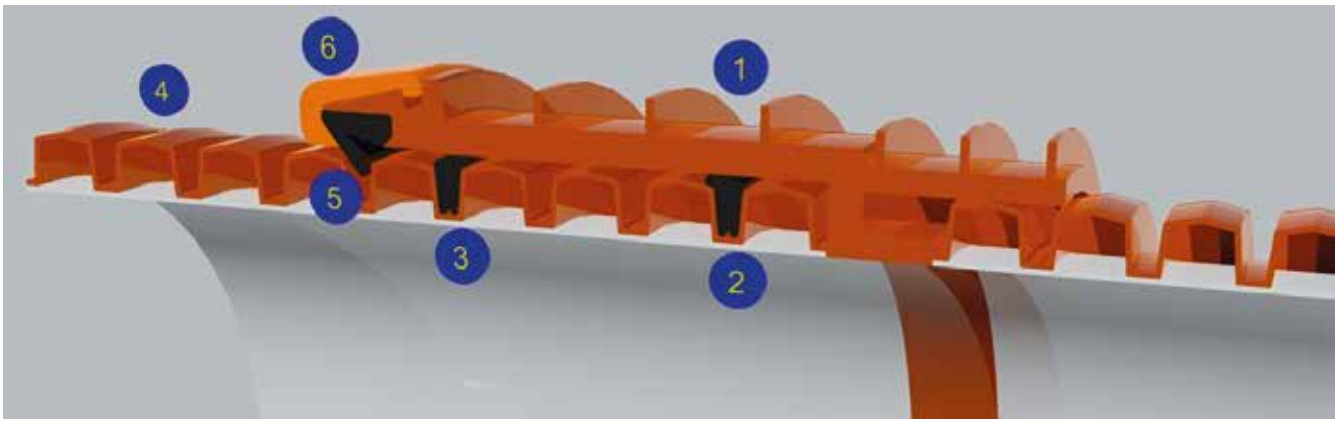


Fig.4. Pragma Lock spigot-and-socket joint locking system – detailed view

It should be noted that the additional items required for the locking the spigot-and-socket joint (as marked on the above figures under 3, 5 and 6 accordingly and described in fig.1) are included in the standard Pragma product range, they are kept available on stock and ensure considerable protection for the spigot-and-socket joint against coming off. The locking system can be installed by any ordinary technician as no special skills and tools are needed.

The spigot-and-socket joints locking system is applicable for Pragma DN/OD160, Pragma DN/OD200, Pragma DN/OD250 and DN/OD400.

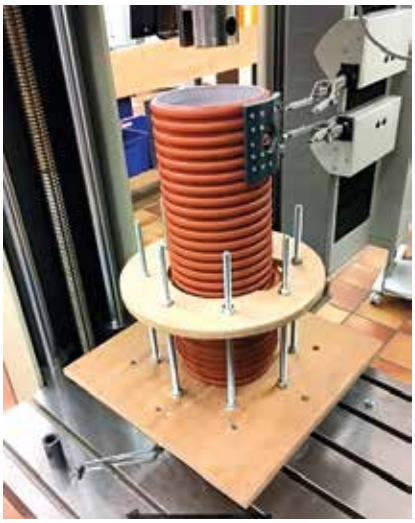


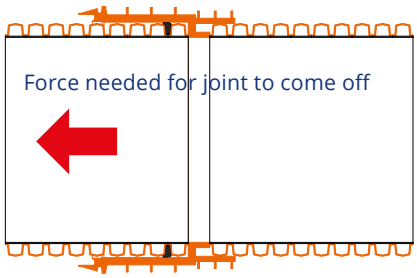
Fig.5. Zwick/Roell type of test setting

The scope of locked spigot-and-socket joint application includes the above-mentioned loamy soils, expansive soils, landslide areas, and situations where highly secure type of installation is required – as in the drainage systems of dumping grounds.

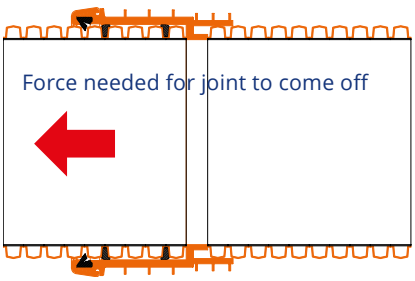
Once installed, the locked spigot-and-socket joint is practically unbreakable, therefore design engineers and installers must carefully consider the need of its installation. Pipelife conducted real tests with the locked spigot-and-socket joint to establish the actual force that needs to be applied so that the joint could come off.

The tests were performed using Zwick/Roell type of test setting at 5 mm/min straining velocity.
Two types of joints were tested:

1. Standard joint – having one EPDM O-ring



2. Pragma Lock



The test results showed that force needed for the spigot-end to come off from the socket end of a Pragma Lock pipe is 3.5 to 3.7 times stronger than the reference force value applied on a standard normal unlocked spigot-and-socket joint.

Force needed for the joint to come off / Joint type	Standard	Pragma Lock
Force needed for the joint to come off, OD200, [N]	264	1104
Force needed for the joint to come off, OD315, [N]	673	3679

Note: The images of the product may not exactly correspond to the actual products.