

Tech Note 18: Thread Sealing Methods for Stainless

TN.18

Glossary:

- PTFE = Polytetrafluoroethylene
- BSP = British Standard Pipe, based on trade dimensions not actual diameter.
- NPT = National Pipe Thread (American), requires a sealant compound or PTFE tape for a leak-free seal as per standards. Based on trade dimensions not actual diameter.

Recommended Practice

AusPress recommend using a PTFE 'Teflon' thread sealant tape for the male ends of both BSP and NPT thread types. Ensure the tape type selected is suitable and approved for the application, such as natural gas.

Union and Loose Nut Fittings

These press fittings are supplied as a flat face union with a gasket seal. When the loose nut is loosened or opened, the gasket is recommended to be replaced each time.

Tightening and Loosening

To tighten the threaded fitting, support the fitting using the fixed nut to tighten and prevent torsional forces being applied to the press join.

Adhesive Pastes & Liquids

Adhesive pastes & liquids can be used however, consideration must be made including:

- Suitability with the thread material (eg low chloride content for stainless steel) and,
- Strength class for permanent or semi-permanent sealing and,
- Diameter thread paste is rated for and,
- Application type such as paste or liquid forms and,
- Priming of the surface is required (often with stainless) and,
- Approvals for the paste for the application (eg gas) and,
- Warranty & expected life offered by the adhesive manufacturer and,
- Cure time and percentage of full strength of the seal – strength is commonly tested on steel which behaves differently to stainless so confirmation with the manufacturer's product data sheet is critical.

Loosing a thread sealed with adhesive paste or liquid must have the fitting supported, using the fixed nut to tighten and prevent torsional forces being applied to the press join. In addition, any heat applied to the adhesive tread area must avoid heating any adjacent rubber ring seals in the press-fitting socket when using temperatures above 100°C.

The following table is a summary comparing known brands and products with a focus on stainless steel suitability:

Brand & Product	Type	Strength Class	Thread Size Limit	316 S/S Suitable	Primer Req'd?	Cure Strength				Approvals	
						1hr	24hr	72hr	Full	Potable Water	Gas
Loxeal 58-10	Liquid	Medium		Y	Recommend "Cleaner 10"	40% (20%)	99% (50%)	99% (50%)	36 hrs	-	-
Loxeal 58-11	Liquid	Medium		Y	Recommend "Cleaner 10"	5% (5%)	75% (50%)	99% (65%)	168 hrs	WRAS & WM-040164	DVGW & AGA 5048
Loxeal 83-21	Liquid	High	Up to 3/4"	Y	Recommend "Cleaner 10"					-	-
Loxeal 83-50	Liquid	High	Up to 3/4"	Y	Recommend "Cleaner 10"	8% (15%)	90% (50%)	95% (50%)	168 hrs	WRAS	DVGW
Loxeal 85-86	Liquid	High	Up to 2"	Y	Recommend "Cleaner 10"		75% (35%)	99% (45%)	168 hrs	WRAS	DVGW
Loxeal 86-21	Paste	High	Up to 2"	Y	Recommend "Cleaner 10"	Func	90%	99%	36 hrs	-	-
Loctite 577	Paste	Medium	Y	Y	N		85% (45%)	95% (50%)	168 hrs	DVGW	AGA 4787
Loctite 248	Semi-Solid	Medium	Not tested	Y	Recommend "N-7649"		90% (55%)	99% (55%)	72 hrs	-	-
Loctite 262	Liquid	Medium to High	Not tested	Y	Recommend "N-7649"		60% (30%)	99% (45%)	72+ hrs	-	-
Weiconlock AN 302-60	Paste	High	Up to 3/4"	Y	Recommend "Cleaner S"	15%	99% (55%)	99% (55%)	12 hrs	-	-
Weiconlock AN 302-80	Paste	High	Up to 1.1/4"	Y					12 hrs	-	-
Weiconlock AN 305-11	Paste	Medium	Up to 3"	Y					10 hrs	DVGW	DVGW
Weiconlock AN 305-72	Paste	Medium		Y					10 hrs	DVGW	DVGW & AGA
Weiconlock AN 305-77	Paste	Medium	Up to 3"	Y	Recommend "Cleaner S"	15%	99% (55%)	99% (55%)	6 hrs	DVGW	DVGW & AGA & WRAS
Weiconlock AN 305-86	Paste	High	Up to 2"	Y					24 hrs	-	-

Y= Yes. N= No. Func= Functional. Values at 22°C working temperature. No data does not indicate acceptable.

Note: Testing is often in comparison with 'steel' for strength shown in brackets (%) above. Confirm with manufacturer for current recommended installation and product data sheet before use.