SURFACE VEHICLE RECOMMENDED PRACTICE

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Thread Sealants

RATIONALE

This technical report is being stabilized because it covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

STABILIZED NOTICE

This document has been declared “Stabilized” by the SAE Air Brake Tubing and Tube Ftg Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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1. ***Scope—***Male pipe threads, including male dryseal pipe threads, when made into assemblies or installed into ports, will generally leak if not covered with a sealant.

This SAE Recommended Practice is intended as a guide to assist designers and/or users in the selection and application of various types of thread sealants. The designers and users must make a systematic review of each type and application and then select the sealant to fulfill the requirements of the application. The following are general guidelines and are not necessarily a complete list.

2. ***References—***There are no referenced publications specified herein.

3. ***Types of Sealant***

3.1 PTFE tape applied as joints are assembled.

3.2 Pre-applied paste.

3.3 Paste applied as joints are assembled.

4. ***Application of PTFE Tape***

4.1 Inspect threads to be sure they are not damaged nor contain slivers, burrs, dirt, or other contaminants.

4.2 Looking from the leading end of the male thread, wrap the tape clockwise circumferentially around the thread. Overlap each spiral wrap of tape approximately 1/2 the width of the tape so that no more than two plies are applied. Be careful to leave the first 1/2 to 1-1/2 threads bare. Each wrap should be wound so that the tape is tight on the threads.

4.3 When assembling, each taped threaded end should be put together two full turns past finger tight on sizes up to 1/2 in male pipe thread. On larger sizes, each threaded end should be put together 1-1/2 to 2-1/2 full turns past finger tight. (Caution—During assembly, shredding of the tape can occur with consequent contamination of the system.)

4.4 Each taped threaded end must be able to pass the test requirements detailed in 7.1 and 8.1. PTFE tape is not recommended for repositioning or reassembly.

5. Application of Pre-Applied Paste

5.1 Inspect threads to be sure they are not damaged nor contain slivers, burrs, dirt, or other contaminants.

5.2 Apply paste evenly, without air pockets, around the circumference of the threaded area, leaving the first 1/2 to 1-1/2 threads unpasted and then extending to completely cover a minimum of the next three threads.

5.3 For recommended weights of sealant, if that method is used or specified, follow manufacturer's recommendation or submit parts to the acceptance test detailed in Section 7 or 8.

5.4 See manufacturer's recommendation for drying times and temperatures. Before use of a threaded part in an assembly, coatings should be firm without being tacky.

5.5 When assembling, each prepasted end should be put together two full turns past finger tight on sizes up to 1/2 in male pipe thread. On larger sizes, each threaded end should be put together 1-1/2 to 2-1/2 full turns past finger tight.

5.6 Each prepasted end must be able to pass the test requirements detailed in Section 7 or 8.

6. Application of Paste at Time of Assembly

6.1 Inspect threads to be sure they are not damaged nor contain slivers, burrs, dirt, or other contaminants.

6.2 Apply paste evenly around the circumference over the first four or five male pipe threads, being careful to avoid air pockets.

6.3 When assembling, each pasted end should be put together two full turns past finger tight on sizes up to 1/2 in male pipe thread. On larger sizes, each threaded end should be put together 1-1/2 to 2-1/2 full turns past finger tight.

6.4 Each pasted end must be able to pass the test requirements detailed in Section 7 or 8.

7. Functional Tests for Pneumatic Applications (When Using Brass or Aluminum Fittings)

7.1 **Leakage After Initial Installation—**Male pipe threads, sealed and assembled into a female pipe thread in accordance with this document, shall not leak when subjected to 0.8 MPa (120 psig) air.

7.2 **Leakage After Reuse—**After 24 h have elapsed, remove the samples used in 7.1 and reassemble them two full turns past finger tight. Subject them to 0.8 MPa (120 psig) air. To pass, no leakage is allowed.

7.3 Repeat 7.2 three additional times, each at 24 h intervals. To pass, no leakage is allowed.

8. Functional Tests for Pneumatic Applications (When Using Steel Fittings)

8.1 **Leakage After Initial Installation—**Male pipe threads, sealed and assembled into a female pipe thread in accordance with this document, shall not leak when subjected to air at the working pressure of the hose or tubing used in the assembly.

8.2 **Leakage After Reuse—**After 24 h have elapsed, remove the samples used in 8.1 and reassemble them two full turns past finger tight. Subject them to air at the working pressure of the hose or tubing used in the assembly. To pass, no leakage is allowed.