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UL 1356

Outline of Investigation for Pipe Joint Sealing Compounds

Issue Number: 5

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Summary of Topics

This fifth issue of the Outline of Investigation for Pipe Joint Sealing Compounds, UL 1356, which covers sealing compound products supplied in liquid, semiliquid, or heavy paste (stick) form, where the product is intended to make threaded metal pipe joints tight against leakage, is being issued to add Supplement SA and Supplement SB to address test fluids.

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INTRODUCTION

1 Scope

1.1 These requirements are for use in the investigation of sealing compound products supplied in liquid, semiliquid, or heavy paste (stick) form, where the product is intended to make threaded metal pipe joints tight against leakage. These products are evaluated when applied in accordance with the manufacturer's instructions, to male threads of metal pipe assemblies. The products are rated for use in equipment intended to handle gasoline, gasoline/ethanol blends, diesel fuel, biodiesel/diesel fuel, biodiesel, naphtha, benzene, kerosene, petroleum oils, natural gas, propane, or butane as specified by the manufacturer.

1.2 The investigation includes tests for the sealing effectiveness of the product, and tests to determine that the product does not cause significant corrosion of common metals or adversely affect the electrical continuity of pipe assemblies on which it is used. The investigation also includes analytical tests required for product identification purposes.

1.3 This outline of investigation does not cover the classification of the product in regard to its flammability, the toxicity of the product or its vapors due to flammability or the effect of normal atmospheric conditions on the product while in storage or in use.

1.4 If requested, the sealing of threaded joints in pipe sizes larger than 2 inches may be investigated using appropriate adaptation of tests described in Section 6 – 8. Tests for uses other than those indicated are not within the scope of these requirements.

2 General

2.1 Product application instructions deemed to be adequate for its proper use shall be provided by the manufacturer. The manufacturer shall also provide product composition information in sufficient detail to permit development of an appropriate analytical test program for product identification.

3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

4 Undated References

4.1 Any undated reference to a code or standard appearing in the requirements of this outline of investigation shall be interpreted as referring to the latest edition of that code or standard.

PERFORMANCE

5 General

5.1 Sealed pipe assemblies required for the following tests shall be made using product applied in accordance with the manufacturer's printed instructions.

6 Assembly Construction and Initial Pressure Testing

6.1 Test assemblies

6.1.1 Pipe assemblies are to be constructed in accordance with 6.1.2 – 6.1.4, from commercial grade Schedule 40, minimum, malleable iron pipe and fittings (ANSI B16.3).

6.1.2 The fittings used are to be threaded with tapered pipe threads cut in accordance with ASME B1.20.1 – NPT tapered pipe thread.

6.1.3 The mating male and female thread patterns are to be checked for evidence of damage to threads and with regard to tolerance with ring and plug gauges manufactured in accordance with ASME B1.20.1. Only pipe and fittings that show no significant evidence of thread damage and that comply with ASME B1.20.1 tolerances shall be used to construct assemblies.

6.1.4 Prior to assembly, thread patterns are to be cleaned thoroughly with a suitable degreasing solvent to the extent that all traces of oil, grease, dirt, or rust are removed. Then the assembly shall be allowed to air dry at room temperature.

6.2 Construction of assemblies

6.2.1 The test assemblies are to be constructed for each end-use application using one tee of the largest pipe size required for testing, a reducing bushing, pipe nipple, bell reducer to ½-inch pipe size, ½-inch pipe nipple, ½-inch tee and ½-inch pipe nipple, with all open fittings closed with a plug as illustrated in Figure 6.1.