

Subject 525

April 6, 2018

## **SUMMARY OF TOPICS**

***The following change in requirements to the Standard for Flame Arresters, UL 525, is being proposed:***

### ***1. Addition of requirements for field-installed accessories and assemblies***

**STP BALLOTS AND ALL COMMENTS DUE: May 21, 2018**

For your convenience in review, proposed additions to existing requirements are shown underlined.

### **1. Addition of requirements for field-installed accessories and assemblies**

## **RATIONALE**

Proposal submitted by: Edgar Wolff-Klammer, UL LLC

UL has had requests to evaluate air intake detonation flame arresters. The proposal do not affect any current UL certifications. Prior to Listing entire fuel-train assemblies (with or without the fuel burner assemblies), the air intake detonation flame arresters will require a UL Listing or UL Recognition. The air intake detonation flame arrester is the necessary transition from a classified area (outside of the burner housing) where a flammable mixture of air and gas may exist to a non-classified area (inside the burner housing).

## **PROPOSAL**

## **INTRODUCTION**

### **1 Scope**

1.1 These requirements cover tank vent deflagration flame arresters and in-line detonation flame arresters, and air intake flame arresters.

1.4 The requirements for air intake flame arresters cover arresters for use with natural draft and power vent burner assemblies containing flammable vapors and gases in mixture with air. These flame arresters are unidirectional or bidirectional and are intended to prevent the transmission of detonation and deflagration.

### **2 Glossary**

2.1.1 AIR INTAKE FLAME ARRESTER – A flame arrester used with a natural draft or power vent burner assembly and acts as the primary air intake for the combustion process.

## CONSTRUCTION

### 8 Provisions for Connection and Inspection

8.1 A flame arrester shall have provisions for flanged or threaded connection to pipe or other suitable connecting means.

8.2 An in-line detonation or air intake detonation flame arrester shall be constructed to permit ease of inspection and cleaning without removing the complete arrester from the system.

## PERFORMANCE

### 9 General

9.2.1 The performance requirements for air intake detonation flame arresters are covered in Sections 21A – 21E.

### AIR INTAKE DETONATION FLAME ARRESTERS

#### 21A Samples

21A.1 Only one sample of each model of air intake detonation flame arrester being tested shall be used for the Endurance Burn and Continuous Flame Tests, Section 21C, and the Detonation and Deflagration Tests, Section 21D.

*Exception No. 1: Additional samples may be used to map or chart unstable (overdriven) and stable detonations prior to beginning the series of 30 detonation and deflagration tests specified in Section 21D.*

*Exception No. 2: Two samples, or one sample for each direction, may be used for the detonation and deflagration tests on an asymmetrical bidirectional air intake detonation flame arrester. When two samples are used, each sample shall also be used for the Endurance Burn and Continuous Flame Tests, Section 21C.*

#### 21B Flow Capacity

21B.1 The flow capacity of a flame arrester shall be determined at the operating pressure specified for the arrester by the manufacturer.

### 21C Endurance Burn and Continuous Flame Tests

#### 21C.1 General

21C.1.1 A Type I flame arrester shall be subjected to the Endurance Burn Test described in 11.2.1 – 11.2.9 and there shall be no flashback or passage of flame, both during the test and when the gas valve is closed at the conclusion of the test.