

# Australian Standard®

## Combustion characteristics of plastics

### Method 3: Determination of smoke-release— Cellular polyurethanes and polyisocyanurates

#### PREFACE

This Standard was prepared by the Standards Australia Committee on Fire Tests for Plastics, under the direction of the Multitechnics Standards Policy Board, to extend the range of Standards dealing with combustion characteristics of plastics. Other Standards in the AS 2122 Series are:

AS

2122 Combustion characteristics of plastics

2122.1 Method 1: Determination of flame propagation—Surface ignition of vertically oriented specimens of cellular plastics

2122.2 Method 2: Determination of minimum oxygen concentration for flame propagation following top surface ignition of vertically oriented specimens

This Standard is technically identical with AS 2282.15, *Methods for testing flexible cellular polyurethane*, Method 15: *Determination of smoke release*.

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## FOREWORD

This test method has been developed to assess the smoke release characteristics of polyurethane foams. It is anticipated that this test would be performed in conjunction with the flame propagation test of AS 2122.1 and would require the use of the test equipment and test specimens used in that test procedure.

The combustion characteristics of a material are complex and a series of tests would be required to specify all combustion characteristics (e.g. ignitability, flame propagation, heat release, smoke release, toxicity, and dripping behaviour).

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## METHOD

**1 SCOPE** This Standard describes the method for determining the level of smoke release when a small, vertically oriented specimen of rigid or flexible polyurethane, or rigid polyisocyanurate, cellular plastics of density less than 100 kg/m<sup>3</sup> are exposed to a small flame. This test is not suitable for polystyrene and other thermoplastic cellular plastics. Its suitability for other cellular plastics has not been determined.

**2 REFERENCED DOCUMENTS** The following documents are referred to in this Standard:

AS

1886 Glossary of terms relating to plastics

2122 Combustion characteristics of plastics

2122.1 Method 1: Determination of flame propagation—Surface ignition of vertically oriented specimens of cellular plastics

2282 Methods for testing flexible cellular polyurethane

2282.1 Method 1: Sampling and conditioning of test specimens

2484 Fire—Glossary of terms

2484.1 Part 1: Fire tests

**3 DEFINITIONS** For the purpose of this Standard the definitions of AS 1886 and AS 2484.1 apply.

**4 PRINCIPLE** The test specimen is positioned in a vertical orientation in a test chimney and ignited by a burner operating for a set time.

The chimney is located beneath a smoke chamber intake, and the smoke from the test is collected. The reduction in transmission of a vertical light beam passing through the chamber is recorded.

**NOTE.** This test would normally be performed in conjunction with flame propagation testing conducted in accordance with AS 2122.1.

## 5 APPLICATION TO FIRE HAZARD ASSESSMENT

**5.1 General** On their own, these test results do not indicate the fire hazard of the material or product under actual fire conditions and consequently should not be applied to the assessment of fire hazard without taking into account additional supportive information.