

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 3894.4—2002

Site testing of protective coatings

Method 4: Assessment of degree of cure

RECONFIRMATION NOTICE

Technical Committee CH-003 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 25 September 2013.

The following are represented on Technical Committee CH-003

Australasian Corrosion Association
Australian Paint Approval Scheme
Australian Paint Manufacturers' Federation
Australian Pipeline Industry Association
Water Corporation Western Australia

NOTES

Australian Standard™

AS 3894.4

Site testing of protective coatings

Method 4: Assessment of degree of cure

PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee CH-003, Paints and Related Materials, to supersede AS 3894.1—1991. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

FOREWORD

A test for the degree of cure will assist in determining whether a coating is suitable for service and whether quality control procedures, such as adhesion and pinhole testing, may be performed.

The firmness of the surface of a coating or its solvent resistance does not necessarily determine the degree of cure, as a coating may achieve surface dryness with a degree of hardness and still be soft underneath. Some coatings, such as elastomeric urethane, are permanently soft and pliable yet fully cured.

These field tests provide a guide for use with other tests in the AS/NZS 3894 series.

METHOD

1 SCOPE

This Standard provides guidance on practical procedures, for use in the field, to assess the degree of cure or through-dry in coatings.

Applicable coatings include those that dry by oxidation (e.g., alkyd), solvent evaporation (e.g., lacquers such as chlorinated rubber), those that set by chemical reaction with a liquid curing agent (e.g., epoxy) and those that react with the atmosphere (e.g., inorganic zinc).

2 DEFINITIONS

For the purpose of this Standards the definition given in AS 2310 apply.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS

1580 Paints and related materials — Methods of test

1580.405.1 Method 405.1: Determination of pencil hardness of paint film

2310 Glossary of paint and painting terms

AS/NZS

3750 Paints for steel structures

3750.15 Part 15: Inorganic zinc silicate paint

ASTM

D 2240 Standard test method for rubber property—Durometer hardness

D 2583 Standard test method for indentation hardness of rigid plastics by means of a Barcol impressor

D 4752 Standard test method for measuring MEK resistance of ethyl silicate (inorganic) zinc-rich primers by solvent rub

4 GENERAL

Four methods of assessing the degree of cure in the field are described in Clauses 4, 5, 6 and 7 as Methods A, B, C and D respectively.

Some of these test procedures may damage the coating to be tested, particularly in the early cure stage. The preparation of test panels, appropriately coated, prepared at the same time and held under identical conditions, may be used for testing and so avoid costly repairs to the coating undergoing assessment. The surface hardness of all coatings, with the exception of inorganic zinc coatings, is affected by temperature. If testing is performed outside the range 15–25°C, the manufacturer's advice should be sought.

Table 1 shows the test methods recommended for assessment of the degree of cure on various types of coatings.