DIN EN 16623:2015-04 (E)

Paints and varnishes - Reactive coatings for fire protection of metallic substrates - Definitions, requirements, characteristi cs and marking

Contents

Page

Foreword 4

Introduction 5

1 Scope 6

2 Normative references 6

3 Terms and definitions 7

4 Symbols and abbreviations 8

5 Requirements 9
5.1 Reaction to fire 9
5.2 Resistance to fire 9
5.3 Durability 9
5.3.1 General 9
5.3.2 Verification of durability 10
5.3.3 Use of topcoats 10
5.4 Primer Compatibility 11
5.4.1 General 11
5.4.2 Generic types 11
5.4.3 Verification of primer compatibility 12
5.5 Emission of dangerous substances 12

6 Evaluation of conformity 13
6.1 General 13
6.2 Sampling 13
6.3 Initial type testing 13
6.4 Characterization of the reactive coating 13
6.4.1 Analytical characterization 13
6.4.2 Physical characterization 13
6.5 Factory production control 13

7 Sustainability 14

8 Marking 14

9 Additional voluntary requirements 14

Annex A (normative) Method for determination of reaction to fire 15

A.1 Guidance for testing in accordance with EN 13823 15
A.1.1 Dimensions of the test rig 15
A.1.2 Test specimens 15
A.2 Guidance for testing in accordance with EN ISO 11925-2 (small burner test) 15
A.3 Guidance for testing in accordance with EN ISO 1716 and EN ISO 1182 (if relevant for reactive fire protection systems) 16

Annex B (normative) Exposure conditions for determination of durability classification 17

B.1 General 17
B.2 Exposure conditions for Type X: Reactive coating system intended for all conditions internal or external 17
B.3 Exposure conditions for Type Y: Reactive coating system intended for semi external conditions 18
B.4 Exposure conditions for Type W: Reactive coating system intended for temporary external exposure prior to final exposure conditions 18
B.5 Exposure conditions for Type Z1: Reactive coating system intended for internal conditions with high humidity 18
B.6 Exposure conditions for Type Z2: Reactive coating system intended for internal conditions with controlled environment 18

Annex C (normative) Insulating Efficiency -- Test Procedure 20

C.1 General 20
C.2 Test specimens 20
C.3 Test Procedure 20
C.4 Test Report 21

Annex D (normative) Determination of identification characteristics 25

D.1 General 25
D.2 Reporting of Specific Methodology for determination of identification characteristics 25

Annex E (normative) Factory production control 26

E.1 General 26
E.2 Quality control testing 26
E.3 Initial factory inspection 27

Annex F (normative) Alternative raw materials, formulation and process changes 28

F.1 General 28
F.2 Formulation tolerances 28
F.3 Formulation change 28
F.4 Raw material approval of an alternative 28
F.5 Process and equipment change 31
F.6 Managing multiple production sites 31

Annex G (normative) Audit testing 32

G.1 General 32
G.2 Selection of product and preparation of test specimens 32
G.3 Choice of test specimens 32
G.4 Illustrative testing pattern 33
G.5 Audit test procedure 33
G.6 Audit test results 33
G.7 Non-compliance 34

Annex H (normative) Levels of fire testing 35

H.1 General 35
H.2 Level 1 fire testing 35
H.3 Level 2 fire testing 35
H.4 Level 3 fire testing 36
H.5 Level 4 independent fire testing 37
H.6 Level 5 independent fire testing 37

Annex I (informative) Guidance for manufacture, storage, application, inspection and repair 38

I.1 Manufacture 38
I.1.1 Manufacturing equipment 38

I.1.2 Temperature during manufacture 38
I.1.3 Manufacturing blending time 38
I.1.4 Raw material quality and traceability 38
I.2 Storage of raw materials 38
I.3 Storage of finished product 38
I.4 Application 39
I.4.1 General 39
I.4.2 Application schedule 39
I.4.3 Compatibility 39
I.4.4 Application requirements and environmental conditions 39
I.4.5 Application controls 40
I.5 Inspection 40
I.5.1 General 40
I.5.2 Inspection criteria 40
I.6 Maintenance and repair 41

Bibliography 42