DIN EN 14879-6:2010-04 (E)

Organic coating systems and linings for prot ection of industrial apparatus and plants against corrosion caused by aggressive media - Part 6: Combined linings with tile and brick layers

Contents

Page

Foreword 4

1 Scope 5

2 Normative references 5

3 Terms and definitions 6

4 General 7
4.1 Steel vessels and apparatus 7
4.1.1 Calculating the dimensions of brick-lined steel vessels 7
4.1.2 Dimensional tolerances (for steel and non-ferrous vessels) 9
4.1.3 Construction of steel vessels 9
4.1.4 Installation of brick-lined vessels 10
4.1.5 Leak tests 10
4.1.6 Repairs and modifications 10
4.2 Concrete vessels and apparatus 10
4.2.1 Calculating the dimensions of brick-lined concrete vessels 10
4.2.2 Dimensional tolerances 10
4.2.3 Requirements to the concrete construction 10
4.3 Substrate preparation 10
4.4 Sealing layer 10
4.5 Service layer 11
4.5.1 Bedding and jointing mortar/cement 11
4.5.2 Jointing materials for expansion joints 17
4.5.3 Semi-finished products 17
4.6 Combined lining system 20
4.7 Selection criteria 21
4.7.1 Type and frequency of fluid loading 21
4.7.2 Thermal loading 22
4.7.3 Changes in temperature 22
4.7.4 Mechanical loading 22
4.7.5 Weather factors 23
4.8 Materials manufacturer 23
4.9 Applicator 23
4.10 Application 23
4.10.1 Sealing layers 23
4.10.2 Service layer 24
4.10.3 General requirements 27
4.11 Protected objects 27

5 Requirements 27
5.1 Fluid load, chemical resistance and tightness 27
5.2 Thermal loading 27
5.3 Temperature change loading 28
5.4 Mechanical loading 28
5.5 Anti-slip protection 29
5.6 Crack bridging 29
5.7 Adhesion strength 29

5.8 Ageing behaviour ... 29
5.9 Weathering behaviour ... 29
5.10 Concrete compatibility ... 29
5.11 Behaviour in cleaning and neutralization processes ... 29
5.12 Capability of dissipating static charges ... 29
5.13 Behaviour in fire ... 30

6 Testing ... 30
6.1 General ... 30
6.2 Receiving inspection of coating/lining materials ... 30
6.2.1 Inspection of materials, components and their markings ... 30
6.2.2 Checking storage conditions ... 30
6.3 Testing of combined lining systems during application ... 30
6.3.1 Ambient conditions ... 30
6.3.2 Sealing layer ... 31
6.3.3 Service layer ... 31
6.3.4 Documentation ... 31
6.4 Suitability testing ... 31
6.4.1 General ... 31
6.4.2 Testing of combined linings ... 32

Annex A (informative) Selection criteria for surface protection systems ... 36

A.1 Load profiles and suitable surface protection systems for floors and walls ... 36
A.2 Load profiles and suitable surface protection systems for collecting basins ... 37
A.3 Load profiles and suitable protection for production plant floors ... 38
A.4 Load profiles and suitable protection for collecting basins, gutters, channels, pipes, etc 39
A.5 Load profiles and suitable protection for containers ... 40

Annex B (normative) Overview of verification of suitability for combined linings ... 41

Annex C (normative) Testing the dissipation capability ... 42

C.1 General ... 42
C.1.1 Dissipation resistance ... 42
C.1.2 Ground dissipating resistance ... 42
C.2 Testing the dissipation resistance of test samples ... 42
C.2.1 Instruments ... 42
C.2.2 Test procedure ... 42
C.2.3 Test report ... 42
C.3 Measuring the ground dissipation resistance on the laid surface protection system ... 43
C.3.1 Instruments ... 43
C.3.2 Preparation ... 43
C.3.3 Test procedure ... 43
C.3.4 Test report ... 44

Annex D (normative) Test methods for tolerances and limit deviations ... 45

D.1 Scope and purpose ... 45
D.2 Tolerances and limit deviations ... 45
D.2.1 Cylindrical vessel ... 45
D.2.2 Flat-sided vessels ... 47
D.3 Test methods ... 47
D.3.1 General ... 47
D.3.2 Cylindrical vessel, cylindrical part ... 47
D.3.3 Shop-fabricated cylindrical vessel, flat base ... 49
D.3.4 Flat-sided vessels, angular horizontal projection (Determination of the flatness of the faces) ... 50

Annex E (informative) A-deviations ... 52

Bibliography ... 53