

# DIN EN ISO 16961:2015-12 (E)

## Petroleum, petrochemicals and natural gas industries - Internal coating and lining of steel storage tanks (ISO 16961:2015); English version EN ISO 16961:2015

---

### Contents

Page

Foreword.....	v
Introduction.....	vi
<b>1 Scope.....</b>	<b>1</b>
<b>2 Conformance.....</b>	<b>1</b>
2.1 Rounding.....	1
2.2 Compliance to this International Standard.....	1
<b>3 Normative references.....</b>	<b>1</b>
<b>4 Terms, definitions and abbreviated terms.....</b>	<b>3</b>
4.1 Terms and definitions.....	3
4.2 Abbreviated terms.....	6
<b>5 Pre-work requirements.....</b>	<b>7</b>
5.1 General.....	7
5.2 Safety precautions in flammable atmosphere.....	7
5.3 Safety precautions in confined space.....	7
5.4 Qualification of coating/lining application and inspection personnel.....	7
5.5 Positive isolation and ventilation.....	8
<b>6 Coating/lining materials.....</b>	<b>8</b>
6.1 General.....	8
6.2 Approvals.....	8
6.3 Procedure qualification trial (PQT).....	9
6.4 Pre-production trial (PPT).....	9
6.5 Holding (blast) primer.....	9
6.6 Caulking (putty) and filler compounds.....	10
6.7 Fibreglass lining materials.....	10
6.7.1 Fibreglass resin compound.....	10
6.7.2 Glass fibre reinforcement.....	10
6.8 Glass flake filled coating/lining system.....	10
6.9 Epoxy coating/lining systems.....	11
6.10 Thixotropic agent for viscosity control.....	11
6.11 Material approvals — Fibreglass lining system.....	11
6.12 Material approvals — Glass flake filled coating/lining system.....	14
6.13 Material approvals — Thin film epoxy coating/lining systems.....	15
<b>7 Surface preparation.....</b>	<b>16</b>
7.1 General.....	16
7.2 Tank pre-cleaning and residue removal (for rehabilitation work).....	17
7.3 Preparatory patching and grinding (for new and rehabilitation work).....	17
7.4 Dry abrasive blasting cleaning.....	18
7.5 Humidity control.....	19
7.6 After blast cleaning.....	19
7.7 Removal of existing laminate linings prior to abrasive blasting.....	20
7.8 Striker plates, steel legs, risers, down comers and supports.....	20
7.9 Safety precautions.....	20

<b>8</b>	<b>Coating/lining application</b> .....	<b>20</b>
	8.1 General requirements .....	20
	8.2 Safety precautions .....	21
	8.3 Areas to be lined (fibreglass lining) .....	22
	8.4 Weather conditions .....	22
	8.5 Primer application .....	22
	8.6 Caulking (putty) application .....	23
	8.7 Fibreglass laminate application .....	23
	8.8 Lining thickness .....	24
	8.9 Glass flake filled coating application .....	24
	8.10 Thin film coating application .....	26
	8.11 Curing .....	27
<b>9</b>	<b>Inspection and testing</b> .....	<b>27</b>
	9.1 General requirements .....	27
	9.2 Environmental conditions testing .....	28
	9.3 Materials and equipment inspection .....	28
	9.4 Compressed air and abrasive .....	28
	9.5 Surface preparation inspection .....	28
	9.6 Coating/lining inspection and testing .....	29
	9.7 Coating/lining film thickness .....	29
	9.8 Holiday detection test .....	29
	9.9 Curing hardness test .....	30
	9.10 Defects and pinhole repair .....	30
	9.11 Adhesion test .....	30
<b>10</b>	<b>Quality requirements</b> .....	<b>30</b>
<b>11</b>	<b>Documentation</b> .....	<b>31</b>
	11.1 General .....	31
	11.2 Work proposal .....	31
	11.3 Work records/reports .....	31
	11.4 Inspection and testing reports and certificates of compliance .....	32
	11.5 Final report .....	32
	<b>Annex A (informative) Dew point calculation chart</b> .....	<b>33</b>
	<b>Annex B (informative) Caulking (putty) application</b> .....	<b>34</b>
	<b>Annex C (informative) Example of coating/lining work record/data sheet</b> .....	<b>35</b>
	<b>Annex D (informative) Example of coating/lining inspection and testing data sheet</b> .....	<b>36</b>
	<b>Bibliography</b> .....	<b>37</b>