

E DIN EN ISO 15136-1:2025-09 (E)

Erscheinungsdatum: 2025-08-15

Petroleum and natural gas industries - Progressing cavity pump systems for artificial lift - Part 1: Pumps (ISO/DIS 15136-1:2025); English version prEN ISO 15136-1:2025

Contents

| | Page |
|-------------------------------------------------------------------|-----------|
| Foreword..... | v |
| Introduction..... | vi |
| 1 Scope..... | 1 |
| 2 Normative references..... | 1 |
| 3 Terms and definitions..... | 2 |
| 4 Abbreviated terms and symbols..... | 8 |
| 5 Functional specification..... | 9 |
| 5.1 General..... | 9 |
| 5.2 PCP type description..... | 9 |
| 5.3 Functional requirements..... | 10 |
| 5.3.1 Application parameters..... | 10 |
| 5.3.2 Environmental compatibility..... | 11 |
| 5.3.3 Compatibility with related well equipment and services..... | 12 |
| 5.4 Design validation..... | 13 |
| 5.5 Product functional evaluation..... | 14 |
| 5.6 Quality control grades..... | 14 |
| 5.7 Additional documentation..... | 14 |
| 5.8 Additional requirements..... | 14 |
| 6 Technical specification..... | 14 |
| 6.1 General..... | 14 |
| 6.2 Technical characteristics..... | 14 |
| 6.3 Design criteria..... | 15 |
| 6.3.1 General..... | 15 |
| 6.3.2 Metals..... | 15 |
| 6.3.3 Rotor coating or surface treatments..... | 15 |
| 6.3.4 Stator elastomer and bond system..... | 16 |
| 6.3.5 Inner surface treatment of metal stator..... | 16 |
| 6.4 Dimensional information..... | 16 |
| 6.4.1 Rotor-stator fit..... | 16 |
| 6.4.2 Dimensional limits..... | 16 |
| 6.5 Performance ratings..... | 17 |
| 6.5.1 Volume capability..... | 17 |
| 6.5.2 Pressure and head rating..... | 17 |
| 6.5.3 Design performance curves..... | 17 |
| 6.5.4 Volumetric efficiency..... | 17 |
| 6.5.5 Design pump speed, torque and power..... | 17 |
| 6.5.6 Maximum pump intake gas volume fraction..... | 18 |
| 6.6 Design verification..... | 18 |
| 6.7 Design validation..... | 18 |
| 6.8 Functional evaluation requirements..... | 18 |
| 6.9 Allowable design changes..... | 18 |
| 6.10 Scaling of design validation..... | 19 |
| 7 Supplier/manufacturer requirements..... | 19 |
| 7.1 General..... | 19 |
| 7.2 Documentation and data control..... | 19 |
| 7.2.1 General..... | 19 |
| 7.2.2 Design documentation..... | 19 |

| | | |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------|------------|
| 7.2.3 | Delivery documentation..... | 20 |
| 7.2.4 | Operator's manual..... | 20 |
| 7.2.5 | Certificate of compliance..... | 20 |
| 7.2.6 | Product data sheet..... | 20 |
| 7.2.7 | Elastomer data sheet..... | 21 |
| 7.3 | Product identification..... | 21 |
| 7.4 | Quality..... | 22 |
| 7.4.1 | General..... | 22 |
| 7.5 | Raw materials certification..... | 23 |
| 7.6 | Additional processes applied to components..... | 23 |
| 7.6.1 | Documentation..... | 23 |
| 7.6.2 | Coatings..... | 24 |
| 7.6.3 | Welding..... | 24 |
| 7.6.4 | Heat treating..... | 24 |
| 7.7 | Traceability..... | 24 |
| 7.8 | Calibration systems..... | 24 |
| 7.9 | Examination and inspection..... | 25 |
| 7.9.1 | General..... | 25 |
| 7.9.2 | The tube of stator..... | 25 |
| 7.9.3 | Stator elastomer..... | 25 |
| 7.9.4 | Stator phasing alignment..... | 26 |
| 7.9.5 | Rotor coating thickness..... | 26 |
| 7.9.6 | Rotor surface finish..... | 27 |
| 7.9.7 | Phasing alignment of welded rotor..... | 27 |
| 7.9.8 | Visual inspection..... | 27 |
| 7.9.9 | Weld..... | 27 |
| 7.9.10 | Core deflection..... | 28 |
| 7.9.11 | Component dimensional inspection..... | 28 |
| 7.10 | Manufacturing non-conformance..... | 30 |
| 7.11 | User/purchaser complaint returns..... | 30 |
| 7.12 | Product functional testing..... | 30 |
| 8 | Repair..... | 31 |
| 9 | Shipping, handling and storage..... | 31 |
| 9.1 | General..... | 31 |
| 9.2 | Preparation for shipment..... | 31 |
| 9.3 | Handling..... | 31 |
| 9.3.1 | Rotor..... | 31 |
| 9.3.2 | Stator..... | 31 |
| 9.4 | Storage..... | 32 |
| Annex A (normative) Requirements for progressing cavity pump elastomers..... | | 33 |
| Annex B (normative) Design validation..... | | 37 |
| Annex C (normative) Functional evaluation..... | | 41 |
| Annex D (informative) Optional information for PCP elastomer testing and selection..... | | 47 |
| Annex E (informative) Installation guidelines..... | | 57 |
| Annex F (informative) Operational guidelines..... | | 60 |
| Annex G (informative) Supplemental information for PCP performance characteristics..... | | 67 |
| Annex H (informative) Example user/purchaser PCP functional specification form..... | | 72 |
| Annex I (informative) Analysis after use..... | | 76 |
| Annex J (informative) Selection and use of drive-string equipment in PCP applications..... | | 90 |
| Annex K (informative) Repair and reconditioning..... | | 97 |
| Annex L (informative) Auxiliary equipment..... | | 100 |
| Bibliography..... | | 106 |