ROMAT PGS SERVICE

IN-LINE HIGH-RESOLUTION SERVICE FOR PIPE GRADE DETERMINATION

To ensure safe, profitable and code-compliant operation of a pipeline throughout its life cycle, pipeline operators have to provide traceable, verifiable, and complete records of any pipeline segment. This record requirement is becoming more critical against the backdrop of increasingly stringent regulations. Current regulatory sampling plans lead to high costs associated with dig planing and execution.

THE SOLUTION

By means of a single in-line inspection, the RoMat PGS in-line high-resolution service provides unique information along the entire pipeline, being an precondition for traceable, verifiable, complete, and reliable pipe records. ROSEN's innovative in-line inspection service for material strength categorization provides measurement of strength properties and accurate determination of pipe grade for every single pipe within the examined pipe section. This service provides a sequential "pipeline DNA" breakup delivering populations based on diameter, wall thickness, strength and pipe length. This service significantly reduces costs associated with obtaining missing pipeline design and record requirements. In 2015, the RoMat PGS in-line high-resolution service for pipe grade determination received the American Society of Mechanical Engineers Global Pipeline Award.

THE SERVICE PROVIDES

- Creation of populations based on pipe grade, diameter, wall thickness, pipe type (seamless, welded) and pipe length
- Determination of yield strength and ultimate tensile stress per pipe joint enabling the determination of pipe grade
- Pipeline DNA analysis by using multiple data sets
- Extended field verifications supporting regulations on request
- Engineering judgements assess findings of pipe grade determination
- Verification of given SMYS, yield strength and tensile strength provided by records
- Completing of SMYS, strength gaps in line segments

KEY ADVANTAGES

- Detailed overview about a pipe lines segmentation as an input for an alternative sampling plan
- Accurate measurement of steel strength (yield strength, tensile strength)
- Optimization of the pipeline's operating pressure
- Maximization of efficiency by avoiding unnecessary excavations
- Each joint is identified and characterized extending the asset's life cycle
- Lifetime integrity management, supported by full recording of the inspection raw data
- High-quality service following certified processes (API 1163), personnel qualification (ASNT) and equipment (CE, ATEX)
- High availability and a wide range of proven tool configurations addressing individual operational pipeline requirements

SERVICE OPTIONS

All aspects from the inspection request to the final report are covered with the flexibility to choose from various service options.

- Cleaning – operational and pre-inspection
- Speed Control – inspection at high flow rates
- XYZ – route mapping and strain assessment
- Multi-Diameter – pipelines with varying diameter
- Offshore – long distance and high pressure
- Post-ILI – data alignment and combined evaluation
- Integrity Assessments – RBI, FFP, CGA
- NIMA – versatile asset integrity software suite

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TECHNICAL SPECIFICATIONS

Standard Operating Specifications

Tool sizes available	6" - 56"
Pipeline product	Gaseous or liquid
Product temperature range	0 °C - 65 °C (32 °F - 149 °F)
Maximum operating pressure	15 MPa (2175 psi)
	25 MPa (3625 psi) optional
Operating speed	up to 2,0 m/s (5.6 mph)*
Product flow range	up to 12 m/s (26.8 mph) **
Minimum pipeline bend radius	1.5 D
Wall thickness range	4 - 25 mm (0.15" - 0.98")
Maximum operating time	400 hrs
Maximum inspection length	800 km (500 miles)

* Depending on inspection parameters.
** Fitted with optional speed control unit

Location and Orientation Capabilities

Axial position accuracy from reference marker	1:1000 (1 m on 1000 m marker distance) (1 ft. on 1000 ft. marker distance)
Axial position from closest weld	±0.1 m (±4")
Circumferential position accuracy	±5°

The axial positioning accuracy specified is based on following criteria:
Distance between upstream and downstream marker/reference point < 2.000 m (1.2 miles)
Actual aboveground distance to both upstream and downstream marker/reference points to be measured and correlated egligible difference between pipeline and soil contour

Wall Thickness Detection

± 1mm (± 0.04") or ±0.1t, whichever value is greater at 80 % certainty

Performance Specifications

Strength sizing accuarcy at 80 % certainty: ±8 ksi (55.2 mpa)

Remarks and Features

- API 1163 compliant services
- CE and ATEX certification available
- Tailored solutions with different specifications upon request: multiple tool sizes or multi-diameter tools, higher pressure rating
- Specifications are subject to change based on specific requirements or tool configurations

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