# ROCD EMAT-C SERVICE
## IN-LINE HIGH RESOLUTION AXIAL CRACK DETECTION AND SIZING

Various types of cracking like stress corrosion cracking, axial fatigue cracks, hook and toe cracks in the pipe body and in the seam weld area are a concern for the safe operation of oil and gas pipelines.

Our RoCD EMAT-C service provides reliable and accurate detection and sizing of cracks as a mandatory basis for a successful and effective pipeline integrity management.

### THE SOLUTION

ROSEN uses an innovative inspection technology to couple ultrasonic energy into the pipe wall without the need for a liquid medium. This makes our EMAT technology the first choice for crack inspection of gas pipelines. Accurate sizing of any crack depth is made possible by the right selection of special EMAT wave modes.

Our well–structured, certified data evaluation process enables ROSEN's data analysts to provide the required high quality assessment on-time. The accuracy of the findings is supported by our large in-house crack database and repository.

The reporting software ROSOFT facilitates the broad use of the inspection results.

### KEY ADVANTAGES

- High dependable detection and accurate continuous sizing of all critical crack anomalies.
- Coating disbondment as precursor of cracking is reliably detected by the ROSEN EMAT technology.
- Application in all pipeline products, e.g. natural gas, LNG, crude oil and gasoline due to the fundamental EMAT principle.
- High availability and a wide range of proven tool configurations addressing individual operational pipeline requirements.
- High quality service with certified processes (API 1163), personnel qualification (ASNT) and equipment (CE).
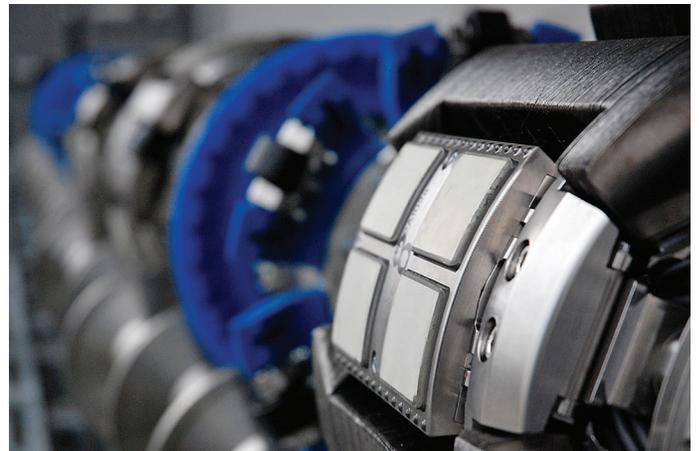
### SERVICE OPTIONS

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
- Dual-Diameter – pipelines with varying diameter
- Combo – multiple inspection technologies in one run
- Offshore – long distance and high pressure
- Post ILI – data alignment and combined evaluation
- Field Verification – MPI, phased array UT
- Integrity – RBI, FFP, crack assessment API 579
- ROAIMS – versatile asset integrity software suite

## ROSEN
empowered by technology

# TECHNICAL SPECIFICATIONS

## Standard Operating Specifications

| | |
|---|---|
| **Tool sizes available** | 10"–48" |
| **Pipeline product** | Gas or liquids |
| **Product temperature range** | 0 °C–65 °C (32 °F–149 °F) |
| **Maximum operating pressure** | 15 MPa (2175 psi) |
| **Operating speed range** | Up to 2 m/s (4.47 mph) |
| **Product flow range*** | Up to 8 m/s (17.9 mph) |
| **Minimum pipeline bend radius** | 1.5D |
| **Maximum operating time** | 50 hours |
| **Maximum inspection length** | 330 km (205 miles) |

*Fitted with optional speed control system (gas lines only)
Notes: Contact ROSEN for more detailed information

## Location and Orientation Capabilities

| | |
|---|---|
| **Axial position accuracy from reference marker**<br>1 m on 1000 m (3.3 ft on 3000 ft) marker distance | 1:1000 |
| **Axial position from closest weld** | ±0.1 m (±4") |
| **Circumferential position accuracy** | ±10° |

## Performance Specifications

| | | |
|---|---|---|
| **Crack detection** | Wall thickness range | Up to 16 mm (063") |
| | Minimum depth (in parent material) | 1 mm (0.04") or 0.2 t[1] |
| | Minimum depth (in long seam) | 2 mm (0.08") or 0.3 t[1] |
| | Minimum length | 40 mm (1.57") |
| | Orientation to pipe axis | ±10° |
| **Crack sizing** | Length sizing | ±20 mm (±0.78") |
| | Depth sizing at 80 % certainty | ±0.15 t |
| **Coating disbondment detection** | Definition of coating disbondment | Missing coating or decreased/non-existent bonding between pipe surface and coating material |
| | Coating types | Polyethylene, fusion bonded epoxy, tape wrap, coal tar enamel, asphalt, other |
| | Minimum size at POD 85 % | 100 mm × 100 mm (3.94" × 3.94") |

[1] whichever value is greater
Abbreviations: POD = Probability of Detection; t = wall thickness

## Remarks and Features

- Other tool sizes are available on request
- Higher pressure rating available on request
- Tailored solutions with different specifications available
- API 1163 certified services
- CE certification available
- Contact ROSEN for more detailed information about the presented service
- Specifications are subjected to change according to specific requirements or tool configurations

**ROSEN**
empowered by technology