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# PHMSA REGULATION: NONDESTRUCTIVE METHOD FOR MECHANICAL PROPERTY EVALUATION

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According to the **PHMSA final rule, section 192.607** states that if an operator does not have **traceable, verifiable, and complete (TVC)** records required by paragraph (b) of this section, the operator must develop and implement procedures for conducting **nondestructive** or destructive **tests**.

The final rule also requires that operators to **reconfirm and document MAOP** for certain onshore steel gas transmission pipelines located in high-consequence area or moderate-consequence area specified in section **192.624**.

Frontics' **AIS (Advanced Indentation System)** series based on the **Instrumented Indentation Technology (IIT)** meets the requirements under the New PHMSA DOT Regulation: 49 CFR 192.607. AIS series can help operators to facilitate the use of non-destructive surface testing: micro indentation as accurate, efficient, and cost-effective tools for material properties confirmation.



## PHMSA 192.607 Testing Requirements: Minimum of 5 places in 2 circumferential quadrants

It only requires ONE installation for one quadrant test. From the test preparation to test analysis, 2 quadrant tests will only take less than an hour.



## PHMSA 192.607: Must achieve at least 95% confidence level

3rd party application cases proves that IIT meets this confidence requirement

- Ultimate Yield Strength (UYS)  $\pm$  10% with a 95% Confidence Level
- Ultimate Tensile Strength (UTS)  $\pm$  10% with a 95% Confidence Level



## Material cutout / sampling are NOT REQUIRED

AIS equipment can be operated on in-service pipelines



## Material Properties and attributes

AIS can be applied on the objects with various mechanical properties such as weld zone and unusual shapes (elbows and t-welds)