



**NACE SP0200-2008**  
**(formerly RP0200-2000)**  
**Item No. 21091**

## **Standard Practice**

### **Steel-Cased Pipeline Practices**

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## Foreword

This standard practice details acceptable practices for the design, fabrication, installation, and maintenance of steel-cased metallic pipelines. It is intended for use by personnel in the pipeline industry.

The use of cased carrier pipe for pipelines crossing under highways and railroads is common practice in the industry. The first cased crossings were made using large-diameter pipe. The carrier pipe was mechanically coupled and pushed through the casing, and the coupling or collars were in direct contact with it. When coatings came into general use, isolating spacers were made of hemp rope saturated with pipe-coating enamel. End seals consisting of either concrete or pipe-coating enamel were poured into each end of the casing. The current practice of installing cased carrier pipe has changed only slightly since the beginning of its use. External loading of the carrier pipe has now been eliminated by the installation of heavy-wall casing pipe, and isolating spacers are used to prevent electrical contact between the casing and the carrier pipe. End seals are used to keep mud and water out of the annular space between the carrier pipe and casing.

This standard was originally prepared in 2000 by NACE Task Group T-10A-18, a component of Unit Committee T-10A—Cathodic Protection. It is based on NACE Publication 10A192, "State of the Art Report on Cased Pipeline Practices," written by the same task group in 1992. This standard was reaffirmed in 2008 by Technology Group (STG) 35—Pipelines, Tanks, and Well Casings. It is issued by NACE International under the auspices of STG 35.

In NACE standards, the terms *shall*, *must*, *should*, and *may* are used in accordance with the definitions of these terms in the NACE Publications Style Manual. The terms *shall* and *must* are used to state a requirement, and are considered mandatory. The term *should* is used to state something good and is recommended, but is not considered mandatory. The term *may* is used to state something considered optional.

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## NACE International Standard Practice

### Steel-Cased Pipeline Practices

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## Section 1: General

1.1 Steel casings are used to install and maintain pipeline crossings such as those at road and railroad rights of way. This standard details acceptable practices for the design, fabrication, installation, and maintenance of steel-cased pipelines.

1.2 Use of cased crossings should be avoided unless required by load considerations, unstable soil conditions, or when their use is dictated by sound engineering practices.

1.3 This standard does not imply that utilization of casings is mandatory or necessary.

1.4 This standard does not imply that cased crossings, whether electrically isolated or electrically shorted, contribute to corrosion of a carrier pipe within a cased crossing. However, cased crossings may adversely affect the integrity of the carrier pipe by shielding cathodic protection (CP) current to the pipe or reducing the CP effectiveness on the pipe in the vicinity of the casing.

1.5 The practices contained in this standard may or may not be applicable to casings installed prior to its issuance. It is presumed that all practices described in this standard are performed in a safe manner.

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## Section 2: Definitions

**Carrier Pipe:** The pipe or piping that is pushed through the casing or sleeve.

**Casing:** A metallic pipe (normally steel) installed to contain a pipe or piping.

**Dogleg:** A term used to describe an offset vent pipe. The vent is offset using several fittings and the shape is similar to a dog's leg.

**Electrolyte:** A chemical substrate containing ions that migrate in an electric field.

**Electrolytic Contact:** Ionic contact between two metallic structures via an electrolyte.

**Holiday:** A discontinuity in a protective coating that exposes unprotected surface to the environment.

**Holiday Testing:** Electrical testing of a coating to locate imperfections (holidays).

**Isolator or Spacer:** A dielectric device specifically designed to electrically isolate a carrier pipe from a casing and provide support for the carrier pipe.

**Metallic Short:** Direct or indirect metallic contact between two metallic structures.

**Pipe-to-Electrolyte Potential:** See *Structure-to-Electrolyte Potential*.

**Split Sleeve:** A method of in situ casing installation by welding two halves of the casing (split sleeve) together around the carrier pipe.

**Structure-to-Electrolyte Potential:** The potential difference between the surface of a buried or submerged metallic structure and the electrolyte that is measured with reference to an electrode in contact with the electrolyte.

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## Section 3: Design

### 3.1 Carrier Design

3.1.1 Consideration should be given to adding supplementary carrier pipe wall thickness, pipe depth, or concrete coating in lieu of casing.

3.1.2 The carrier pipe shall be effectively coated, with consideration being given to the application of supplementary coating. See NACE SP0169<sup>1</sup> for details.

3.1.3 The carrier pipe shall be properly supported inside and outside the casing to prevent metallic contact between the casing and the carrier pipe. See NACE SP0286<sup>2</sup> for details.

### 3.2 Casing Design

3.2.1 The casing should be kept as short in length as possible. This may lessen the chance of shorting.

3.2.2 For pipelines 203 mm (8.0 in) in diameter and larger, the diameter of the casing should be a minimum