

## SECTION 942 PIPE GASKETS

### 942-1 Round Rubber Gaskets for Pipe Joints.

Except where O-ring type gaskets are specified for special cases and for special type pipe, round rubber gaskets for use in concrete pipe joints shall meet the requirements of Article 6.9 of ASTM C 361, with the additional requirements that the gasket used shall be of such cross sectional area and perimeter as to properly fit the space provided in the pipe joint in which it is to be used.

Prior to use, the gasket shall be stored in as cool a place as practicable.

### 942-2 Cold Adhesive Preformed Plastic Gaskets (For Sealing Elliptical Concrete Pipe Joints).

**942-2.1 General:** Cold adhesive preformed plastic gaskets shall be of a material, shape and size so as to effect a permanent water tight seal in joints of elliptical concrete pipe. A minimum of two pieces of gasket material shall be used in each joint.

The gasket material shall be protected by a 2-piece removable wrapper. To facilitate application, the 2-piece wrapper shall be so designed that one-half may be removed longitudinally without disturbing the other half.

The size of the gasket shall be in accordance with the manufacturer's recommendation for the particular joint in which it is to be used. However, the minimum size for each of the gaskets used in a joint shall be in accordance with the following:

| Pipe Size<br>(Inches) | Nominal Gasket Size<br>(Inches) | Minimum Cross-Section<br>(In <sup>2</sup> ) |
|-----------------------|---------------------------------|---------------------------------------------|
| Up to 19 by 30        | 1 1/2                           | 1.75                                        |
| 19 by 30 to 53 by 83  | 1 3/4                           | 2.5                                         |
| Over 53 by 83         | 2                               | 3.25                                        |

The above minimum size requirements are based on a joint designed with a maximum taper of ten degrees and an in-place annular space of approximately 1/4 inch.

**942-2.2 Composition:** The gasket sealing the joints shall be produced from blends of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler. The material shall contain no solvents and shall not produce irritating fumes or obnoxious odors. The gasket shall not depend on oxidizing, evaporation or chemical action for its adhesive or cohesive strength.

The chemical composition of the gasket material shall meet the following requirements:

|                                                   | Minimum | Maximum |
|---------------------------------------------------|---------|---------|
| Bitumen (petroleum plastic content) (% by weight) | 50      | 70      |
| Ash-Inert Mineral Matter (% by weight)            | 30      | 50      |
| Volatile Matter (@ 325° F)<br>(% by weight)       |         | 2.0     |

The gasket joint sealing compound when immersed for 30 days at ambient room temperature separately in 5% solution of caustic potash, a mixture of 5% hydrochloric acid, a 5% solution of sulfuric acid, and a saturated hydrogen sulfide solution shall show no visible deterioration.

The physical properties of the gasket joint sealing compound as shipped shall meet the following requirements:

|                                                       | Minimum | Maximum |
|-------------------------------------------------------|---------|---------|
| Specific Gravity @ 77°F                               | 1.2     | 1.35    |
| Ductility @ 77°F                                      | 50 mm   |         |
| Softening Point @ 77°F                                | 320°F   |         |
| Penetration (0.1 mm) 77°F @ (150 gms)<br>five seconds | 50      | 120     |

**942-2.3 Certification:** The manufacturer of the gasket material shall furnish the Engineer certified test results covering each shipment of material to each project.

**942-3 Resilient Connectors for Sealing Precast Structures to Pipe Joints.**

**942-3.1 General:** Resilient connectors shall meet the requirements of ASTM C 1478. The connectors shall also be compatible with the precast structure and pipe.

**942-3.2 Qualified Products List (QPL):** All resilient connectors shall be listed on the Department's Qualified Products List (QPL). Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6.

**942-4 Profile Rubber Gaskets for Concrete Pipe Joints.**

(a) Round Pipe: The gaskets shall meet the requirements specified in Article 6.9 of ASTM C 361.

(b) Elliptical Pipe: The gaskets shall meet the requirements specified in Article 6.1.1 of ASTM C 443.

Additionally, the gaskets used shall be of such cross sectional area and perimeter as to properly fit the space provided in the pipe joint in which it is to be used.

The gaskets shall be stored in as cool a place as practicable prior to use.