



# GAS DESIGN STANDARD PLUGS AND CAPS FOR NON-PRESSURIZED GAS PIPELINES

A-81

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## Purpose and Scope

This gas design standard (GDS) illustrates, specifies dimensions, and provides code numbers for redwood plugs and plastic end (PE) caps for use on non-pressurized gas pipelines as described in Utility Procedure TD-9500P-16, "Abandonment of Underground Gas Facilities." It also provides the manufacturer's part numbers for PE caps.

### 1 General Information

- 1.1. Refer to Utility Procedure TD-9500P-16 for approved sealing methods of abandoned pipelines.
- 1.2. Refer to [Table 1](#) for redwood plug ([Figure 1](#)) dimensions and code numbers.
- 1.3. Refer to [Table 2](#) for PE cap ([Figure 2](#)) dimensions and code numbers. Contact the responsible gas engineer for cap sizes without code numbers, for pipe sizes not shown, or when the use of PE caps are at depths greater than those listed in [Table 3](#).
- 1.4. Do not use PE caps in aboveground locations or where the cap could be exposed to ultraviolet (UV) radiation.
- 1.5. Do not store PE caps uncovered or expose to UV radiation for extended periods of time.
- 1.6. If a PE cap is cracked or cut, discard it (do not use).
- 1.7. When using PE caps, backfill the first 12" above the cap with sand or other suitable material (refer to GDS A-03, "Gas Trench Design and Construction," and Engineering Material Specification EMS-4123, "Backfill Sand").
- 1.8. To ensure proper installation of PE caps (i.e., full depth of the cap is on the pipe), cut the pipe end squarely and place a mark on the pipe at each of the four quadrants a distance back from the end of the pipe equal to the depth of the cap. When the cap is fully installed, it should reach all four marks.
- 1.9. Only use PE caps listed in this standard (see [Table 2](#)).

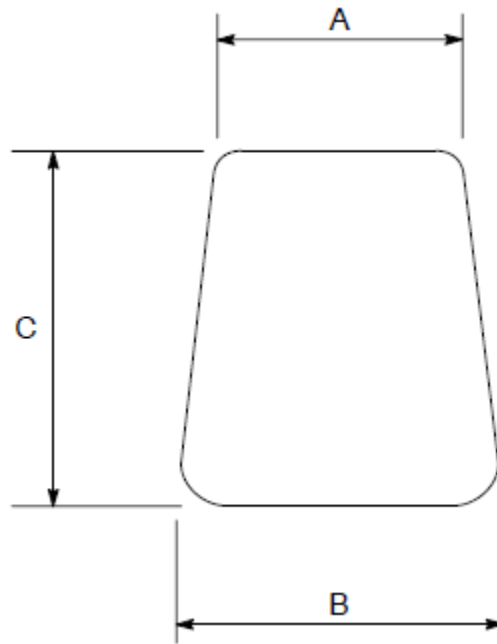


Figure 1. Redwood Plug

Table 1. Dimensions<sup>1</sup> and Code Numbers for Redwood Plugs

Nominal Pipe Size (NPS)	A	B	C	Code
3/4	1/4	1	4-3/8	204839
3/4-1-1/4	3/8	1-1/2	5-1/2	209036
1-1/4-1-1/2	1/2	2	5-1/2	209037
2	1-3/4	2-1/2	4	209038

1. All dimensions are in inches.

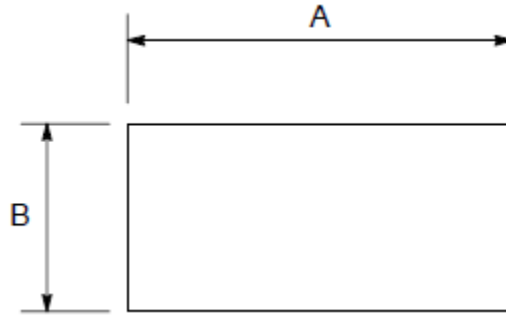


Figure 2. PE Cap

Table 2. Dimensions<sup>1</sup>, Part Numbers, and Code Numbers for PE Caps

NPS	A	B	Part Number	Code
2	2.378	1.096	RRC-2	021124
3	3.490	1.700	RRC-3	021125
4	4.500	1.725	RRC-4	021126
6	6.640	2.150	RRC-6	021127
8	8.670	2.310	RRC-8	021128
10	10.705	2.768	RRC-10	021130
12	12.679	2.820	RRC-12	021131
16	16.000	2.837	RRC-16	021132
18	18.000	2.845	RRC-18	021133
20	20.000	2.955	RRC-20	021144
22	22.000	2.986	RRC-22	—
24	24.000	2.995	RRC-24	021139
26	26.000	2.750	RRC-26	021140

1. All dimensions in inches.

**Table 3. Approved PE Cap Usage by Pipe Size and Depth of Cover**

NPS <sup>1</sup>	Maximum Depth of Cover (to top of pipe) <sup>2</sup>		
	Horizontal Placement <sup>3</sup>	10° to 45° Placement <sup>4</sup>	45° to 90° Placement <sup>5</sup>
2	10	10	10
3	10	10	10
4	10	10	8
6	10	8	6
8	10	6	5
10	10	5	4
12	9	4	3
16	6	2	—
18	5	—	—
20	5	—	—
22	4	—	—
24	3	—	—
26	2	—	—

1. Measured in inches.
2. Measured in feet.
3. The axis of the pipeline is horizontal, angled up not more than 10°, or angled downward.
4. The axis of the pipeline is angled up more than 10°, but less than 45°.
5. The axis of the pipeline is angled more than 45°.

## Target Audience

Personnel who use PE caps or redwood plugs for abandonment of gas facilities.

## Definitions

NA

## Compliance Requirement / Regulatory Commitment

NA

## References

Engineering Material Specification EMS-4123, "Backfill Sand"

GDS A-03, "Gas Trench Design and Construction"

Utility Procedure TD-9500P-16, "Abandonment of Underground Gas Facilities"

## Appendices

NA

## Attachments

NA

## Revision Notes

Revision 2 has the following changes:

1. Replaced Utility Operations (UO) Standard S4129, "Deactivation of Gas Facilities," with Utility Procedure TD-9500P-16, "Abandonment of Underground Gas Facilities."
2. Removed rows in [Table 1](#) featuring redwood plugs sizes 3" and bigger.
3. Simplified tables by adding footnotes and callouts.
4. Updated document formatting by converting to current template.

**Asset Type:** Storage, Compression & Processing, Measurement & Control, Transmission Pipe, Distribution Mains, Distribution Services, Customer Connected Equipment, CNG/LNG

**Function:** Engineering, Construction, Maintenance & Operations, and Emergency Administration

**Document Contact:** [Gas Design Standard Responsibility List](#)