

[METRIC]
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Supersedes
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COMMERCIAL ITEM DESCRIPTION CAULKING COMPOUNDS

The General Services Administration has authorized the use of this commercial item description, for all federal agencies.

1.0 SCOPE. This Commercial Item Description covers four types of 1-part caulking compounds suitable for use as recommended by the manufacturers for sealing, caulking, filling, leveling and glazing in general exterior architectural service on buildings and structures.

Unless otherwise specified, these requirements are predicated on caulking applied to maximum joints .375" wide by .375" deep, filled by either cartridge injection or hand spatula.

2.0 CLASSIFICATION

- Type I - **Oil Base Caulk** is a traditional, slow-drying, elastomer-modified, vegetable oil based caulk. Oil base caulk gets firmer over years and may eventually become rock hard and brittle. Oil based caulk is not suitable for applications subject to expansion, contraction and settling.
- Type II- **Siliconized Acrylic Latex Caulk** is waterbased. Acrylic caulks have fair adhesion to most building materials and are available in a wide range of colors. Acrylic based caulks are not true elastomers and tend to lose flexibility after a few years of outdoor exposure. Acrylic caulks are paintable with oil and water base paints.
- Type III - **Butyl Rubber** is a true elastomeric caulk. Butyl rubber caulk is solvent based. Butyl rubber caulk has excellent adhesion to most building materials. Butyl rubber caulk is suitable for extreme outdoor exposures to water, sunlight, high and low temperatures and expansion joint movements due to wind-loading or settling. Butyl rubber caulk can be applied in more inclement weather and is paintable with either solvent base or latex paints.
- Type IV - **100% SILICONE** caulk is a true elastomeric caulk. Silicone caulk adheres to most building materials, and has excellent adhesion to glass. Silicone caulk is suitable for extreme outdoor service exposure to water, sunlight, high and low temperatures and expansion joint movements. Silicone caulks generally require adhesion primers for paint to adhere..

Beneficial comments, recommendations, additions, deletions, clarification, etc., and any data which may improve this document, should be sent to: GSA, Paints and Chemicals Commodity Center, 400 15th Street, S.W., Auburn, WA 98001.

DISTRIBUTION STATEMENT A: Approved for public release.
Distribution is unlimited.

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3.0 SALIENT CHARACTERISTICS

TABLE I -Caulk Requirements

| Requirements | Type I Oil Base Caulk | Type II Siliconized Acrylic Latex | Type III Butyl Rubber | Type IV 100% Silicone | Test Methods |
|--|------------------------------|--|---|---|----------------------------------|
| 3.1 <u>Total joint movement</u> (maximum extension-compression) (example: + or - 7.5% in extension and compression = 15% of average joint width) | 5% | 15% | 15% | 50% | ASTM E 1399 |
| 3.2 <u>Shelf life</u> (when stored above freezing and below 80° F) months min.) | 12 | 24 | 18 | 24 | Manufacturer's Certification |
| 3.3 <u>Standard colors</u> (as specified in the contract or P.O.) | white gray | white dk. gray lt gray bronze "cedar" redwood beige dark brown lt. brown | white gray black bronze off white | white gray black bronze clear | Manufacturer's color standard |
| 3.4 <u>Application temperature</u> (minimum air and surface temperature until cured) | | | | | |
| °C | 5-38 | 10-32 | 5-50 | 5-60 | mfg'r ¹ |
| (°F) | (41-100) | (50-90) | (41-122) | (41-140) | " |
| 3.5 <u>Service temperature range -cured sealant</u> | | | | | |
| °C | -20 to 65 | -34 to 82 | -45 to 95 | -50 to 120 | mfg'r ¹ |
| (°F) | (-4 to 149) | (-29 to 180) | (-48 to 203) | (-58 to 248) | " |
| 3.6 <u>Expected years of installed service</u> (minimum years) | 5 | 15 | 20 | 20 | mfg'r ¹ |
| 3.7 <u>Time to paint²(max.)</u> | 5 days | 24 hrs | 7 days | 24 hrs | mfg'r ¹ |
| 3.8 <u>*Extrudability</u> (minimum) | 30 mls/min (1-fl oz/min.) | 30 mls/min. (1-fl oz/min.) | 30 mls/min. (1-fl oz./min.) | 30 mls/min. (1-fl oz/min.) | see below |
| Test: Until shelf life expiration, 3 persons shall each be able to discharge a minimum of one fluid ounce of caulk into a measuring container within one minute, using a manual caulking gun. The caulk shall be at @ 55° F and the plastic nozzle shall be cut to a 3/16 inch inside diameter. | | | | | |
| 3.9 <u>Artificial weathering:</u> | | | | | |
| washout | - | none | - | - | ASTM C732 |
| washout | none | - | none | none | ASTM C792 |
| slump | - | none | - | - | ASTM C732 |
| slump | none | - | none | none | ASTM C792 |
| cracking | - | none | - | - | ASTM C732 |
| cracking | none | - | none | none | ASTM C792 |
| discoloration | none | none | none | none | ASTM C732 |

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TABLE I -Caulk Requirements (continued)

| Requirements | Type I Oil Base Caulk | Type II Siliconized Acrylic Latex | Type III Butyl Rubber | Type IV 100% Silicone | Test Methods |
|--|-----------------------------|---|-----------------------------|-----------------------------|-----------------|
| chalking | none | - | none | none | ASTM C792 |
| chalking | - | none | - | - | ASTM C732 |
| 3.10 *Volume shrinkage (maximum) | 20% | - | - | - | ASTM D2453 |
| | - | 30% | 25% | 15% | ASTM C733 |
| 3.11 <u>Low temperature flexibility</u> | no cracks or adhesion loss | | | | ASTM C736 |
| butyl rubber: no cracking; no separation; no delamination; no adhesion loss | | | | | ASTM C711 |
| 3.12 <u>Extension recovery</u> (minimum) | - | 75% | - | - | ASTM D736 |
| 3.13 <u>Peel strength (min.)</u> | | | | | |
| grams/linear cm | - | 350.0 | 700.0 | 840.0 | ASTM C794 |
| lbs./linear inch | - | (5 lb./in.) | (10 lb./in.) | (12 lb./in.) | ASTM C794 |
| 3.14 <u>Tenacity</u> | no cracks | - | - | - | ASTM D2453 |
| | - | no cracks | no cracks | no cracks | ASTM C711 |
| 3.15 <u>Slump (mm max.)</u> | 4.0 | - | - | - | ASTM C713 |
| | - | 4.0 | 3.8 | 4.0 | ASTM D2202 |
| 3.16 <u>Stain index (maximum)</u> | | | | | |
| S= papers stained: | 6.0 | 3.0 | 2.5 | 0.0 | ASTM D2203 |
| T=stain width mm: | 1.5 | - | 1.0 | - | ASTM D2203 |
| 3.17 <u>*Tack free time</u> (maximum hours) | 72.0 | 6.0 | 72.0 | 24.0 | ASTM D2377 |
| 3.18 <u>Hardness (maximum)</u> | | | | | |
| Shore A | - | 45 | 40 | 50 | ASTM C679 |
| 3.19 <u>"Bubbling" of 1-part, elastomeric solvent-release type caulks</u> | | | | | |
| % area | N/A | N/A | 10% max | N/A | ASTM C712 |

3.20 *Consistency Type I, II, III or IV caulk, in cartridge packaging. Randomly select and test two cartridges for each type and color. Cut a 1/8 inch inside diameter hole at the tip of each cartridge. Using normal manual effort, failure to discharge all caulk, before the traveling piston reaches the bottom of two cartridges, shall fail the entire delivery lot. "Work" the above discharged caulk onto a flat non-porous surface with a spatula. Caulk that is not homogenous, creamy, free from obvious lumps, seeds, coalesced caulk, unprocessed materials or particles shall fail the entire delivery lot.

4.0 REGULATORY REQUIREMENTS

4.1 Material Safety Data Sheets. Material Safety Data Sheets (MSDS) shall be submitted in accordance with FED-STD-313C, or later revision, if published.

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4.2 Recovered Materials and Restricted Materials. The manufacturer shall utilize recovered materials to the maximum extent possible. There shall be no lead, mercury, or hexavalent chromium used in the formulation of the sealant. Maximum background lead content shall be 0.06% (600 parts per million), weight basis of dry film determined in accordance with ASTM D 3335.

5.0 QUALITY ASSURANCE PROVISIONS

5.1 Contractor Certification. The Contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this Commercial Item Description, and the product conforms to the producer's own drawings, specification(s) standards and quality assurance practices, and is the same product offered for sale in the commercial marketplace. The Government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

5.2 ASTM. Use the latest method in effect on the date of the solicitation or order. ASTM standards are available from the American Society for Testing Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

5.3 PRESERVATION, PACKING, PACKING AND MARKING Unless otherwise specified in the contract or order, each cartridge shall contain a minimum of 10.3 fluid ounces of deliverable caulk; each shipping container may contain up to 15 cartridges; marking shall be normal commercial.

6.0 NOTES.

Procedures for Testing Methods.

¹ Mfg'r. tests shall be predicated on applicable and reproducible scientific methods.

² Paint shall be applied in accordance with the caulking manufacturer's instructions

* Essential acceptance tests

Military Custodians:

Army -MR
Navy -SH
AF -99

Preparing activity
GSA-FSS

Coordinating activity:

Army - ME