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Specifier Note: This guide specification has been prepared using the CSI® (Construction Specification Institute) MASTERFORMAT® 2018 Edition.

The purpose of this guide specification is to assist the specifier in correctly specifying sealant products and execution. The specifier needs to edit the guide specifications to fit the needs of specific projects. Editable text fields are highlighted in orange for visibility. Contact a Henkel LOCTITE® Specialist to assist with appropriate product selections.

This guide provides for a high performing LOCTITE® TITEFOAM® Big Gaps; polyurethane-based insulating foam sealant that expands to fill, seal, and insulate Big Gaps inside or out up to three inches. It is a polymer foam based on purified & concentrated ingredients that deliver premium durability. It is easy to use and apply with its attached straw applicator and provides a quick durable seal from the elements. Use for filling gaps and cracks around wiring and plumbing penetrations, HVAC ductwork, basement and crawlspace drafts, sill plate & rim joists, attic hatches, under baseboards, gas line penetrations and outside water faucets.

DISCLAIMER: This Henkel Corporation Guide Specifications has been written as an aid to the professionally qualified specifier and design professional. The use of this guideline specification requires the sole professional judgment and expertise of the qualified specifier and design professional to adapt the information to the specific needs for the building owner and the project, to coordinate with their construction document process, and to meet all the applicable building codes, regulations, and laws. HENKEL EXPRESSLY DISCLAIMS ANY WARRANTY, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE OF THIS PRODUCT FOR THE PROJECT.

**LOCTITE® TITEFOAM®: Big Gaps**

## **SECTION 07 27 36 – Sprayed Foam Air Barrier**

### **PART 1 GENERAL**

**1.01 SUMMARY** (Specifier Note: edit the following [A. This section includes the following] to meet project specific project applications and conditions.)

A. This section includes the following:

1. LOCTITE® TITEFOAM® Big Gaps: Application of sprayed foam air barrier to fill, seal, and insulate Big Gaps inside or out up to three inches.

B. RELATED SECTIONS: (Specifier Note: edit the following [B. RELATED SECTIONS] to meet project specific applications and conditions. Specify section numbers in accordance with CSI MASTER FORMAT and section titles referenced. Remove any of the following that do not apply.)

1. 01 00 00 General Requirement
2. 04 20 00 Unit Masonry
3. 06 10 00 Rough Carpentry
4. 07 10 00 Dampproofing and Waterproofing
5. 07 21 00 Thermal Insulation
6. 07 26 00 Vapor Retarders
7. 07 27 00 Air Barriers

- 8. 07 62 00 Sheet Metal Flashing and Trim
- 9. 07 65 00 Flexible Flashing
- 10. 07 90 00 Joint Protection
- 11. 07 92 00 Joint Sealants

C. Recommended applications:

- 1. LOCTITE® TITEFOAM® Big Gaps is suitable for interior and exterior applications:
  - a. Use for filling gaps and cracks and sealing around:
    - i) Wiring and plumbing penetrations
    - ii) Hvar ductwork
    - iii) Basement and crawlspace drafts
    - iv) Sill plate & rim joists
    - v) Attic hatches
    - vi) Under baseboards
    - vii) Gas line penetrations and outside water faucets
  - b. Can be used to seal out drafts and moisture.
  - c. Can be used to keep out pests and bugs.
  - d. Excellent adhesion to most building materials including:
    - i) Wood, metal, stone, brick, PVC.

D. Limitations:

- 1. LOCTITE® TITEFOAM® Big Gaps product application limitations:
  - a. LOCTITE® TITEFOAM® Big Gaps is not a fire stopping material and SHOULD NOT be used in areas that require fireproof or fire stopping materials.
  - b. Despite significantly higher UV resistance, it is still recommended to protect the foam from UV radiation.
  - c. Exposed foam should be coated with a protective covering or coating.
  - d. Do not store product on its side.
  - e. Does not bond polyethylene, polytetrafluoroethylene (PTFE)/Teflon® or siliconized surfaces.
  - f. For cold weather application, product should be stored at room temperature at least 12 hours before application.
  - g. In dry conditions, it is recommended to fill gaps in several layers by application of smaller foam strings (up to 3 inch thickness)
  - h. Certain materials such as rubbers and plastics may have bonding difficulties. Test before use
  - i. Flexible sheet goods
- 2. Refer to LOCTITE® TITEFOAM® Big Gaps Technical Data Sheets (TDS) available at <https://www.loctiteproducts.com/> additional information.
  - a. Contact manufacturer for any additional questions or concerns regarding suitable substrates and product limitations.

## 1.02 REFERENCES

A. FEICA – OCF TEST METHOD (TM)

- 1. TM 1004-2012 - Determination of the Dimensional Stability of an OCF Canister Foam
- 2. TM 1006-2011 - Determination of the Sagging Behaviour of an OCF Canister Foam

3. TM 1012-2011 - Determination of the Shear Strength of an OCF Canister Foam
  4. TM 1013-2013 - Determination of the Movement Capability of an OCF Canister Foam
- B. ASTM International (ASTM)
1. ASTM E2112 – Standard Practice for Installation of Exterior Windows, Doors and Skylights.
- C. California Air Resources Board (CARB)
- D. South Coast Air Quality Management District (SCAQMD)

### 1.03 SUBMITTALS

- A. Refer to section 01 33 00 – Submittal Procedures ([Specifier Note: Delete all that do not apply or have not been submitted.](#))
1. 01 33 13 – Certificates
  2. 01 33 16 – Design Data
  3. 01 33 19 – Field Test Reporting
  4. 01 33 23 – Shop Drawings, Product Data, and Samples
  5. 01 33 26 – Source Quality Control Reporting
  6. 01 33 29 – Sustainable Design Reporting
- B. Product Technical Data: Submit most current manufacturer technical literature for each type of product used including the following, but not limited to:
1. Preparation instructions and recommendations.
  2. Storage and handling requirements and recommendations.
  3. Installation methods.
- C. Samples: All products specified. Verify performance criteria and installation procedure.
- D. Quality Assurance Submittals
1. Manufacturer Instructions: Provide manufacturer’s written installation instructions.

### 1.04 QUALITY ASSURANCE

- A. Installer Qualifications:
1. Installer to comply with quality assurance articles referenced in ASTM E2112 for installation of air barrier foam sealants.
  2. Installation shall be in accordance with manufacturer’s installation guidelines and recommendations.
  3. Installer shall have documented history of successful project execution and installation of said product.
- B. Pre-Construction Mock-Up: ([Specifier Note: Mock-ups are recommended for all projects using LOCTITE® TITEFOAM® Big Gaps. Mock-up requirement will likely be included in the specification section for the wall cladding and/or windows. Include LOCTITE® TITEFOAM® Big Gaps as part of the required mock-up.](#))
1. Install mock-up prior to installation using LOCTITE® TITEFOAM® Big Gaps including surface preparation per LOCTITE® TITEFOAM® Big Gaps

manufacturer's instructions. Obtain Architect/Engineer/Consultant or Owner's approval of joint treatments to establish adhesion, appearance, and workmanship standard.

- a. Mock-Up Size: **insert measurement**
- b. Mock-Up Substrate: **insert substrate** vertical surfaces as agreed to prior to Mock-up installation.
- c. Maintain mock-up during construction for workmanship standard.
- d. Mock-up to be incorporated into final construction upon Architect/Engineer/Consultant/Owner's written approval.

## 1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, handle, and protect all products in accordance with Section 01 60 00, Product Requirements. (Specifier Note: Review the following. Delete all that do not apply.)
  1. 01 61 00 – Common Product Requirements
  2. 01 64 00 – Owner-Furnished Products.
  3. 01 65 00 – Product Delivery Requirements
  4. 01 66 00 – Product Storage and Handling Requirements
  5. 01 66 13 – Product Storage and Handling Requirements for Hazardous Materials
  6. 01 66 16 – Product Storage and Handling Requirements for Toxic Materials
- B. Store LOCTITE® TITEFOAM® Big Gaps materials as recommended by manufacturer. Refer to manufacturer Technical Data Sheet (TDS) available at <http://www.loctiteproducts.com>.
  1. Product must be stored vertically, not horizontally on its side.
  2. Store in a cool, dry place. For maximum performance and shelf life, store between 45°F (7°C) and 77°F (25°C).
    - a. The product can be stored for a maximum of 1 week at -4°F (-20°C).
    - b. Do not store below -4°F (-20°C), below this temperature product valve may spontaneously open resulting in leakage.
  3. Containers are under pressure:
    - a. Do not expose to open flame or temperatures above 120°F (49°C).
    - b. Do not store under direct sunlight.
    - c. Excessive heat can cause bursting and premature aging of components resulting in shorter shelf life.
    - d. When containers are empty, vent off any excess pressure.
    - e. DO NOT discard empty can in garbage compactor.
    - f. DO NOT incinerate.
    - g. DO NOT puncture, cut, or weld container.
  4. **Note:** When storing foam dispensing applicators with foam cans attached, be sure to store the tool with the can valve pointing downwards.
    - a. Storing the can upright may cause propellant to leak and the foam applicator to become inoperative.
- C. Comply with manufacturer's ordering instructions and lead-time(s) required to avoid construction delays.
- D. Deliver all LOCTITE® TITEFOAM® Big Gaps materials and components in manufacturer's original, unopened, undamaged containers with identification labels

intact.

## 1.06 PROJECT CONDITIONS

### A. Environmental Requirements:

1. Verify substrates and ambient air temperature at project site before, during, and after application to assure compliance with manufacturer's recommendations.
  - a. Weather Conditions:
    - i) Apply in accordance with manufacturer's instructions. Refer to product Technical Data Sheets (TDS) available at [www.loctiteproducts.com](http://www.loctiteproducts.com).
    - ii) Compliance: Follow manufacturer's specific safety, health and environmental recommendations per most recent Safety Data Sheets, technical bulletins, and instructions. Handle all solvents in compliance with applicable EPA, OSHA, and VOC requirements regarding health/safety standards.

## 1.07 WARRANTY

### A. LOCTITE® Limited Warranty:

1. This product is warranted by Henkel Corporation to be free from defects in materials when used as directed. Henkel's sole obligation shall be, at its option, to replace or refund the purchase price of product proven to be defective. Henkel makes no other warranty – express or implied – including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE and will not be liable for consequential or incidental damages. This Limited Warranty gives you specific legal rights, which vary from state to state.
  - a. For warranty assistance, contact Henkel at 1.800.624.7767 M-F 9:00 am to 4:00 pm ET.

**PART 2 PRODUCTS** (Specifier Note: Product Information is proprietary to LOCTITE® TITEFOAM®: Big Gaps. If additional products are required for competitive procurement, contact the Henkel Corporation for assistance – 1-800-624-7767, Mon. – Fri. 9:00AM – 4:00PM ET)

## 2.01 MANUFACTURERS

### A. Approved Manufacturer:

1. Henkel Corporation:
  - a. Address: 26235 First Street, Westlake, OH 44145
  - b. Phone: 1-866-591-2178
  - c. Web Address: <http://www.loctiteproducts.com/>

## 2.02 MATERIALS

### A. Uncured Properties:

1. Appearance: Polymer Foam
2. Color: White
3. Composition: Single Component Polyurethane
4. Flash Point: -155.2°F (-104°C)
5. Specific Gravity: 1.107
6. VOC Content (CARB): 19.28% by weight
  - a. SCAQMD rule 1168 208.6 g/L

- 7. Shelf Life: 15 months from date of manufacture (unopened)
- 8. Lot Code Explanation:
  - a. MM/DD/YY (bottom of cannister)
  - b. MM = month of manufacture
  - c. DD = day of manufacture
  - d. YY = year of manufacture
  - e. Example: 10/31/18 = October 31, 2018, is the manufacture date

B. Application Properties:

- 1. Application Temperature:
  - a. Ambient conditions between 23°F (-5°C) and 95°F (35°C)
  - b. Can temperature between 41°F (-5°C) and 86°F (30°C)
- 2. Odor: Slight ether
- 3. Repositioning time: 15-20 minutes\*
- 4. Tack-Free Time: 6-8 minutes\* at 73°F (23°C) and 50% RH
- 5. Cut Time: 50 – 70 minutes\*
- 6. Cure Time: Approximately 24 hours\*
- 7. Clean Up: Clean up uncured foam residue with acetone. Scrape away cured sealant using a sharp-edged tool. Follow solvent manufacturer's precautions or using solvents.
- 8. \*Time is dependent upon temperature, humidity, and depth of sealant applied.

C. Cured Performance Properties:

- 1. Color: White
- 2. Cured Form: Flexible Solid
- 3. Water Resistant: Yes
- 4. Dimensional Stability: <±5% (TM 1004:2012)
- 5. Movement Capability: >25% (TM 1013:2013)
- 6. Sandable: Yes
- 7. Paintable: Yes
- 8. Service Temperature: -40°F (-40°C) to 194°F (90°C)
- 9. Maximum Joint Width: 3 inch (7.62 cm) (TM 1006:2011@41°F)
- 10. Shear Strength: 12.3 psi (75kPa) (TM 2012:2011)

**2.03 ACCESSORIES:**

A. General:

- 1. Verify compatibility of any product that makes physical contact with or is used in combination with LOCTITE® TITEFOAM® Big Gaps.

B. Required Safety Equipment:

- 1. Eye protection
- 2. Gloves
- 3. Proper work clothes
  - a. Cured foam is difficult to remove from skin, clothing and other substrates. May discolor skin.
- 4. Appropriate Respiratory Protection
  - a. Maintain adequate ventilation

- C. Product Specific Application Equipment & Tools: (Specifiers Note: Remove sections below that do not apply to project specific conditions. Include additional sections that aren't explicitly outlined below but are part of project scope and conditions.)
1. LOCTITE® TITEFOAM® Big Gaps application straw
  2. Utility Knife
- D. Bond-breaker tape: Polyethylene tape, foil, or other approved plastic tape as recommended by sprayed foam air barrier manufacturer to prevent 3-sided joint adhesion to rigid, in-flexible joint fillers or fillet joint surfaces at back of joint where such (Specifier Note: Edit the following. Installer shall use manufacturer approved bond-breaker tape and verify compatibility. Specify manufacturer approved bond-breaker tape below. Delete this section if bond-breaker tape is not specified.)
1. Specify manufacturer approved bond breaker tape.
- E. Cylindrical Sealant Backer Rod: Provide joint backings that meet ASTM C1330, Type C (closed) or Type B (soft cell, non-absorbent bi-cellular backing materials with surface skin) sized 25% or greater than joint opening with proper density to control sealant depth and profile. Follow foam manufacturer's recommendations with backer rod selections for optimum joint sealant performance.
1. **Note:** Installer shall not use "open cell" backer rod material in combination with the use of LOCTITE® TITEFOAM® Big Gaps. Contact designated manufacturer representative for questions or concerns. (Specifier Note: Edit the following. Installer shall use manufacturer approved backer rod and verify compatibility. Specify manufacturer approved backer rod below. Delete this section if backer rod is not specified.)
  2. Specify manufacturer approved backer rod

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify substrate and surface conditions are in accordance with LOCTITE® TITEFOAM® Big Gaps manufacturer recommended tolerances prior to installation.
- B. **REVIEW ALL SAFETY PRECAUTIONS BEFORE HANDLING THIS PRODUCT:**
1. Refer to LOCTITE® TITEFOAM® Big Gaps Technical Data Sheet (TDS) available at <https://www.loctiteproducts.com/>. Refer to Safety Data Sheet (SDS) for additional information.
  2. When transporting odd cans by passenger car leave the container wrapped in a cloth in the trunk, never in the passenger compartment.
  3. **DANGER!**
    - a. **EXTREMELY FLAMMABLE.**
    - b. **VAPOR MAY CAUSE FLASH FIRE.**
    - c. **VAPOR AND SPRAY MIST HARMFUL.**
      - i) **OVEREXPOSURE MAY CAUSE LUNG DAMAGE.**
    - d. **MAY CAUSE ALLERGIC RESPIRATORY AND SKN REACTION.**
    - e. **CONTENTS UNDER PRESSURE.**
      - i) Do not expose to open flame or temperatures above 120°F (49°C). Do not store under direct sunlight. Excessive heat can cause bursting and premature aging of components resulting in shorter shelf life. When containers are empty, vent off any excess pressure.

- ii) DO NOT discard empty can in garbage compactor.
  - iii) DO NOT incinerate.
  - iv) DO NOT puncture, cut or weld container.
4. **DANGER!**
- a. Contains polyurethane prepolymer, methylenediphenyldiisocyanate, dimethylether and hydrocarbon propellant mixture.
5. **EXTREMELY FLAMMABLE.**
- a. Do not use near sparks, heat, or open flame.
  - b. Vapors will accumulate readily and may ignite explosively.
  - c. Ventilate area during use and until all vapors are gone.
6. **DO NOT SMOKE WHILE USING.**
- a. Extinguish all ignition sources. If burned, dried foam may release hazardous decomposition products.
  - b. Dried foam may be combustible if exposed to flame or temperatures above 240°F.
  - c. Avoid prolonged exposure to sunlight or heat from radiators, stoves, hot water and other sources of heat that may cause bursting.
  - d. Do not puncture, incinerate, burn, or store above 120°F.
  - e. Do not discard empty can in garbage compactor.
    - i) Gives off harmful vapor of solvents and isocyanates.
  - f. Do not use if you have chronic lung or breathing problems, or if you have ever had a reaction to isocyanates.
  - g. Use with adequate ventilation.
  - h. Use appropriate respiratory protection when potential to exceed exposure limits exists.
    - i) If you have breathing problems during use, leave the area and get fresh air. If symptoms develop or persist, call a doctor or obtain medical treatment; have this label with you.
7. **EYE AND SKIN IRRITANT.**
- a. Avoid contact with eyes and skin.
    - i) Prolonged or repeated skin contact may lead to sensitization and dermatitis.
  - b. Wash hands after using.
  - c. Do not swallow.
  - d. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
8. **FIRST AID:**
- a. **For eye contact:** flush with water for 15 minutes. Call a physician if irritation develops and persists.
  - b. **For skin contact:** wipe off excess uncured foam with a clean rag or paper towel immediately. Get medical attention if irritation develops and persists.
  - c. **If affected by inhalation:** remove to fresh air and contact a physician.
  - d. **If swallowed:** do not induce vomiting. Call a physician or Poison Control Center immediately.
9. **KEEP OUT OF REACH OF CHILDREN.**
10. **WARNING: Cancer and Reproductive Harm – [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).**
11. Refer to product SDS (available at [www.loctiteproducts.com](http://www.loctiteproducts.com)) for further information

**C. RECOMMENDED METHOD OF DISPOSAL FOR UNUSED PRODUCT:**

- 1. Vent off excess pressure and dispose of in an appropriate waste receptacle.



2. Dispose of according to provincial and federal governmental regulations.

### 3.02 PREPARATION

- A. Installer shall refer to LOCTITE® TITEFOAM® Big Gaps Technical Data Sheet (TDS) for additional product installation instructions and conditions. TDS accessible through <http://www.loctiteproducts.com/>
- B. Surface Preparation:
  1. The temperature of the working area should be between 23°F (-5°C) and 95°F (35°C).
    - a. When working in cold conditions, can should be stored at room temperature for at least 12 hours before use.
  2. Ensure all surfaces are clean and free from dirt, dust, oil, and other contaminants likely to impair adhesion.
    - a. Surfaces can be moist but not frosted or iced.
  3. Cover surfaces not intended to be foamed.
  4. Shake can vigorously before use for 30 seconds (15-20 times minimum).
    - a. Screw the foaming straw to the valve.
    - b. Shake intermittently during use.
- C. General Preparation:
  1. Read all operating instructions packaged with the dispensing unit before using.
  2. The temperature of the product should be between 41°F (5°C) and 86°F (30°C).
  3. To ensure full and even curing of the foam on porous substrates (i.e., brickwork, concrete) moisturize surfaces with water spray before application.
  4. Use straw plug as needed to block foam from exiting the straw.

### 3.03 INSTALLATION

- A. Installer shall refer to LOCTITE® TITEFOAM® Big Gaps Technical Data Sheet (TDS) for additional product installation instructions and conditions. TDS accessible through <http://www.loctiteproducts.com/>
- B. General:
  1. Holding can upside down, press the trigger which controls outflow rate of the foam.
  2. Dispense the foam sparingly, filling the joint initially by half to avoid excessive overflows.
  3. Shake can regularly during use.
  4. Slight misting with water can speed cure.
  5. Foam can be trimmed with a knife after an hour.
  6. Foam will be fully cured in approximately 24 hours.
  7. It is recommended foam be protected from UV radiation by a protective covering or coating such as paint, plaster, mortar, etc. to avoid discoloration.

### 3.04 FIELD QUALITY CONTROL

- A. Notify manufacturer's designated representative to obtain periodic observations of sprayed foam installation.

- B. Field Adhesion testing is recommended for unverified or unapproved substrates. Contact designated manufacturer representative for consultation.

### **3.05 CLEANING AND PROTECTION**

- A. Installer shall refer to LOCTITE® TITEFOAM® Big Gaps Technical Data Sheet (TDS) for additional product cleaning and disposal instruction. TDS accessible through <http://www.loctiteproducts.com/>
- B. Recommended Method of Disposal for Unused Product:
  - 1. Vent off excess pressure and dispose of in an appropriate waste receptacle.
  - 2. Dispose of according to provincial and federal governmental regulations.
- C. Cleaning Uncured Foam:
  - 1. Clean up uncured foam residue immediately with acetone.
  - 2. Scrape away cured sealant using a sharp-edged tool.
  - 3. Follow solvent manufacturer's precautions for using solvents.

**END OF SECTION**